

9813.1 Humboldt Bay

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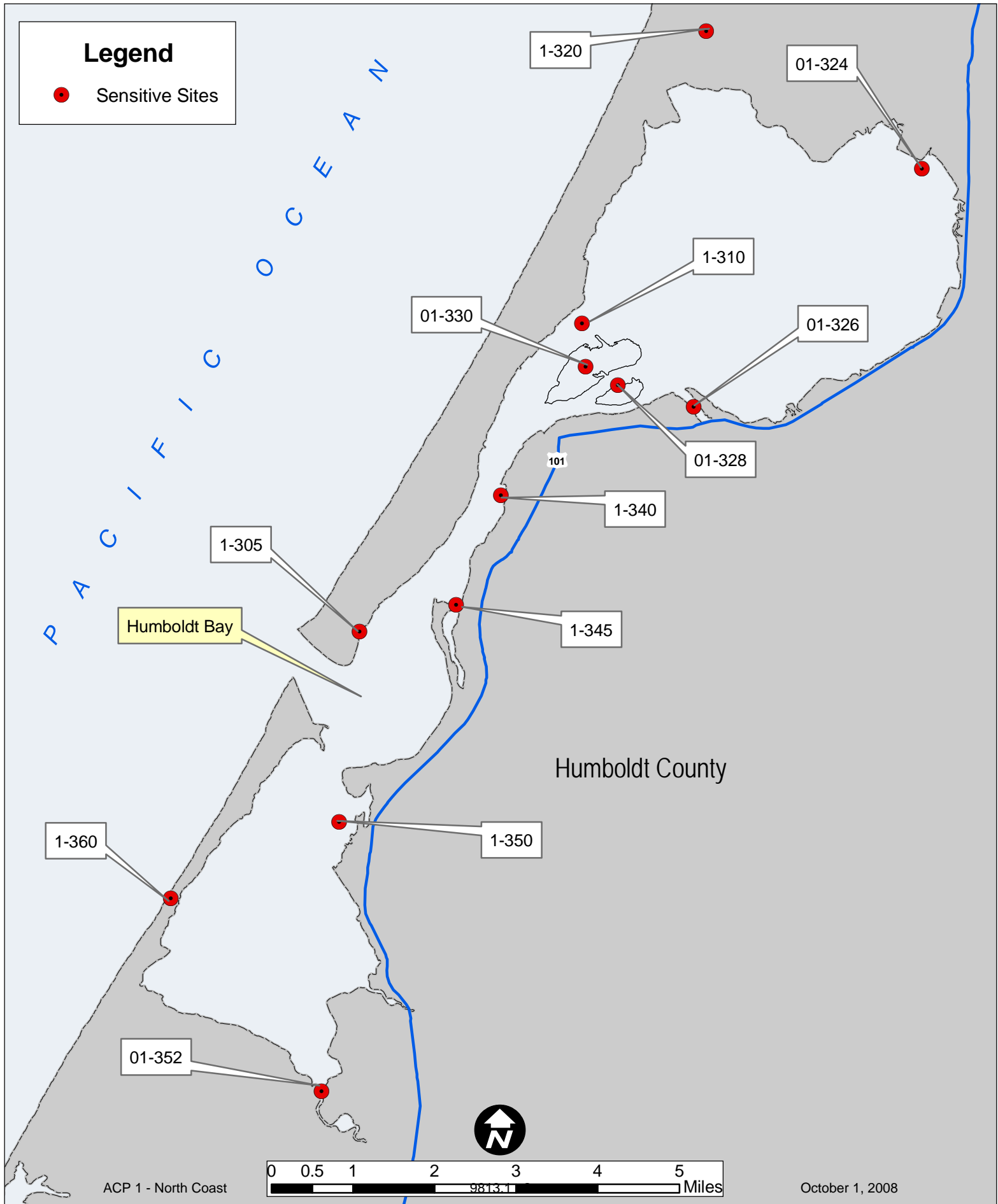


ACP 1 HUMBOLDT BAY SENSITIVE SITES



Legend

● Sensitive Sites



HUMBOLDT BAY GEOGRAPHIC RESPONSE PLAN

This insert into the North Coast Area Contingency Plan may also serve as a removable field guide during an oil spill response.

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Important Information

Please complete this page and make a **copy for the situation unit before going into the field.**

SPILL NAME: _____
Your name: _____ Organization _____
Phone _____ Cellular _____ Pager _____ Radio Call Sign _____
Your Assignment _____

EMERGENCIES: Highway Patrol, Sheriff, Police, Medical,911

	Location or Person	Phone #	Cellular #	Pager #
Your Supervisors				
Command Center				
Operations				
Planning				
Logistics				
Safety Officer				

HUMBOLDT BAY GEOGRAPHIC RESPONSE PLAN

INTRODUCTION

General Description: Humboldt Bay is a large tide-driven coastal lagoon with very little freshwater input. The Bay is separated from the ocean by long sand spits with an entrance channel artificially stabilized by concrete dolosse. The Bay consists of three segments: 1) North Bay (Arcata Bay); 2) South Bay; and, 3) Entrance Bay/North Bay Channel. North and South Bays are both characterized by extensive tidal mud flats with more than 1/2 of each exposed at low tides. They are extensively interlaced with drainage channels and have important wildlife and commercial mariculture value. The Entrance Bay/North Bay channel area is a relatively narrow, deeper central area, and is the industrialized portion of the shoreline.

Currents: The circulation of Humboldt Bay water is almost entirely tidally driven. South Bay's water exchange rate amounts to 60% of its Mean High Water (MHW) volume, and North Bay's rate of exchange averages 44% of its MHW volume. Measurements have shown that 75% of the water entering and exiting North Bay passes through the Samoa Channel. Complete water exchange estimates vary, but 14 tidal cycles, or about 7.5 days, seems likely.

These large volume exchange rates result in high-velocity tidal currents. The following data were obtained from Boyd, et al., 1992 and were reported as unpublished data, but seem supportable based upon the experience of mariners on the Bay.

North Bay channel.....	3.0kts
Entrance to South Bay.....	2.0kts
Entrance Channel.....	3.3kts
Eureka Inner Reach.....	1.0kts

Because 75% of the water entering North Bay does so through the Samoa Channel, it seems likely the currents here approach 3 knots.

Hydrology: Freshwater discharge into the bay represents very little of the daily tidal exchange and probably has only a localized effect (Boyd, et. al.). Surrounding foothills provide a small drainage basin of about 222 sq mi (578 km²), with 85% of the water draining to either North Bay, or to Entrance Bay/North Bay channel from the Elk River. About 12% falls as precipitation directly on the Bay and the remainder is runoff into South Bay. Salinity transects done following heavy rainfall have shown most freshwater runoff from North Bay streams to be discharging to the center of the Bay via the inner reach from North Bay. Elk River runoff was quickly mixed with Bay water near Elk River. Only minor depressions in salinity could be found in transects done in South Bay and at the location where South Bay meets Entrance Bay.

Humboldt Bay tides are called mixed tides because there is a major low, a minor high, a minor low, and a major high tide (not necessarily in this order) within each approximate 25 hour period. Greatest current velocities occur during changes from major high to major low or vice versa. **All response supervisors should have tidal prediction charts to ensure personnel safety and to aid in response activities.**

RESPONSE: Response to any oil spill on Humboldt Bay must be a coordinated, pre-planned attack to contain and recover the oil as close to the source of the spill as possible. If the source of a spill is in Entrance Bay/North Bay Channel, this may be the only way to protect both North and South Bays. The characteristics described for North and South Bays make spill response operations within these two areas of the Bay almost impossible except for some tidal inlets accessible by highways along the margins of the Bay. Neither North Bay nor South Bay has a good location where oil can be collected and recovered and water depths are generally insufficient for on-water collection.

Oranges, used as drogues to gauge the trajectory of oil spilled in Humboldt Bay, have shown that it is unlikely oil spilled at the beginning of a flood tide in Entrance Bay, or even at the Chevron bulk fuel plant, would reach North Bay during the first flood tide cycle. It is likely to be carried into South Bay on the first tide cycle if the incident were to occur along the South Jetty. It is likely that it would also enter Elk River on the first flood tide cycle for any incident that occurred at the South Jetty or in Entrance Bay. Spilled oil would not likely reach small stream inlets to North or South Bay until several tide cycles had passed.

On successive tides most oranges became stranded along the western shoreline of the Bay between the Samoa bridge and the USCG boat station. A few stranded in the vicinity of Palco Marsh. If the stranded oranges had been a persistent type oil, they would have been refloated by successive tides and transported towards North Bay.

This geographic response plan recommends a timely and orderly progression of steps that can be taken to contain and recover as much oil as possible within the industrialized portions of the Bay, protect those sensitive wildlife habitats adjoining this part of the Bay, and begin setting-up protective strategies for North and South Bays. These strategies are meant to serve as a guide that will help drive response planning before a spill has occurred and during the early stages of a spill. The strategies should be modified to fit environmental conditions (predicted tide heights, stage of tide, wind, amount of freshwater runoff, etc.) extant at the time of the spill.

This plan does not deal with the most immediate concerns of human health and safety, stopping the spill at its source, and containment at the source. Individual response plans deal with these issues.

The following table describes, in some detail, what can be done once oil is in the water. It sets priorities for response at specific locations, explains the objective for the response, and lists the obvious, but not all, equipment needs. Maps of the Bay showing recommended response locations, and blank maps for responder use, follow. I believe these strategies will help to contain spilled oil within the developed part of the Bay (our primary objective) and help to prevent its spread to North (Arcata) and South Bays.

These same strategies and their order of implementation can be effective at any stage of either a flood, or ebb tide, for any incident occurring between the entrance channel and Chevron's marine terminal, the likely route on which a large incident would occur. Oil spilled at or near the entrance can be expected to reach areas identified with the numeral '1' on the first flood tide after the spill. Those areas numbered '2' should encounter oil on the second flood tide. Those numbered '3' should encounter oil on the 3rd, or subsequent, flood tides.

Tabular Response Strategies
Humboldt Bay Geographic Response Plan

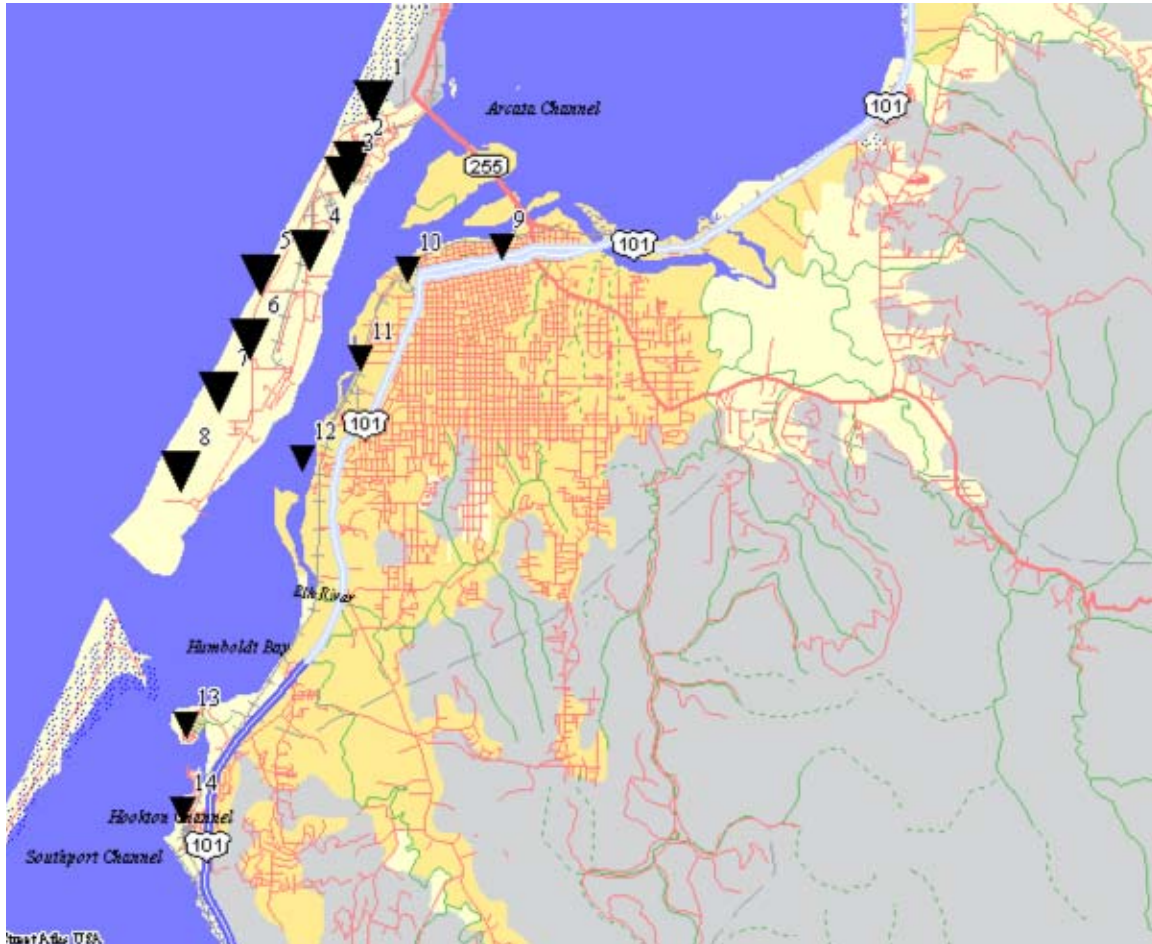
Priority	Response Locations	Objective	Equipment Estimates
1 Bay Entrance & North Bay Channel	Palco Marsh (1-340-1)	Install pre-fitted splash boards into the water gate to prevent tidal exchanges	Splash boards are stored at the Chevron Terminal in Eureka
	(1-340-2)	Insure the Del Norte Street tidal gates are free from debris	Debris hooks, shovels, pry-bar, pitchfork
	Elk River Marsh (1-345-1)	Shut key-locked drop gates to prevent tidal exchange into the marsh	Keys from the Chevron Terminal or the City of Eureka
	Incident specific on the water recovery	Recover oil using the pre-staged MSRC shuttle barge	Shuttle barge, workboat, crews & all operational ancillary components
	Natural Collection sites (1-305-2)	Boom to direct oil into natural debris collection areas of the bay	4 work boats, 2000' hard boom, 10 anchors, 2x 4 person crews, 2 functional skimmer systems & waste storage collection
1 Samoa Channel	Indian Island (1-330-1)	Deflect oil away from Island.	3500' harbor boom, 2 skiffs & 10 workers
	(1-310-2)	Direct oil with boom to a skimmer.	1200' harbor boom, SPS, & 10 workers.
1 South Bay	Buhne Point to South Bay boat (1-350-1)	Deploy boom to strand oil on shore.	1200' harbor boom, work boats, skimmers & 10 workers
	Southport Channel (1-350-2)	On water recovery	SBS, 100' boom, 2 skiffs and their operators
2 Samoa Channel	Indian Island (1-330-2)	Deflect oil away from Island to Woodley Is.	1200' harbor boom, 2 skiffs & 10 workers
	Louisiana Pacific Dock (1-310-3)	Recover oil by diverting to shore based skimming	2000' harbor boom, in <400' segments, 1 skimmer & storage, 1 skiff, 4 workers
2 Central Bay	Elk River (1-345-2)	Recover oil. Stop oil movement up river.	1400' harbor boom, 300' sorbent boom, 1 skiff, 1 skimmer & storage, 10 workers
2 Indian & Woodley Islands / Eureka Channel	Indian Island (1-330-2)	Deflect oil from Indian Island to Woodley Island	1200' harbor boom, 1 boom boat, 10 workers
	Woodley Island (1-328-1)	Deflect oil from Eureka channel to skimmer at Woodley Island	1200' harbor boom, 1 skiff, 10 workers, 1 skimmer & storage

Tabular Response Strategies

Humboldt Bay Geographic Response Plan

Priority	Response Locations	Objective	Equipment Estimates
3 North (Arcata) Bay	Mad River Slough (1-320)	Prevent oil from entering the slough	1200' hard boom, 1200' sorbent boom, 100' S boom, anchors, stakes, skimmer & storage, 6 workers, & hand tools.
	Jacoby Creek (1-324)	Prevent oil from entering the creek	500' hard boom, 500' sorbent boom, 100' S boom, anchors, stakes, 6 workers, & hand tools.
	Gannon Slough (1-324)	Prevent oil from entering the slough	500' hard boom, 500' sorbent boom, 100' S boom, anchors, stakes, 6 workers, & hand tools.
	Butcher Slough (1-324)	Prevent oil from entering the slough	300' hard boom, 300' sorbent boom, 50' S boom, anchors, stakes, 6 workers, & hand tools.
	McDaniels Slough (1-324)	Prevent oil from entering the slough	150' hard boom, 150' sorbent boom, 50' S boom, anchors, stakes, 6 workers, & hand tools.
	Eureka Slough (1-326)	Prevent oil from entering the slough, and recover oil if possible.	1000' hard boom, 1000' sorbent boom, 200' S boom, anchors, stakes, 10 workers, & hand tools. Skimmer & storage as needed
3 South Bay	White Slough & Salmon Creek (1-352)	Prevent oil from entering the slough	Use 600' of hard boom, deliverable to site by USCG helicopter

Access points map for Humboldt Bay.



Waterfront Access for Spill Response.

1. Louisiana Pacific Corp. Samoa Wharf. Take L-P Drive off New Navy Base Rd.
2. Louisiana Pacific Corp., Samoa chips Wharf. Take L-P Drive off New Navy Base Rd.
3. Louisiana Pacific Corp., chips wharf (formerly North Coast Export Co.). Take L-P Drive off New Navy Base Rd.
4. South Bay Marina, Samoa division, marine ways. Bay St. off New Navy Base Rd.

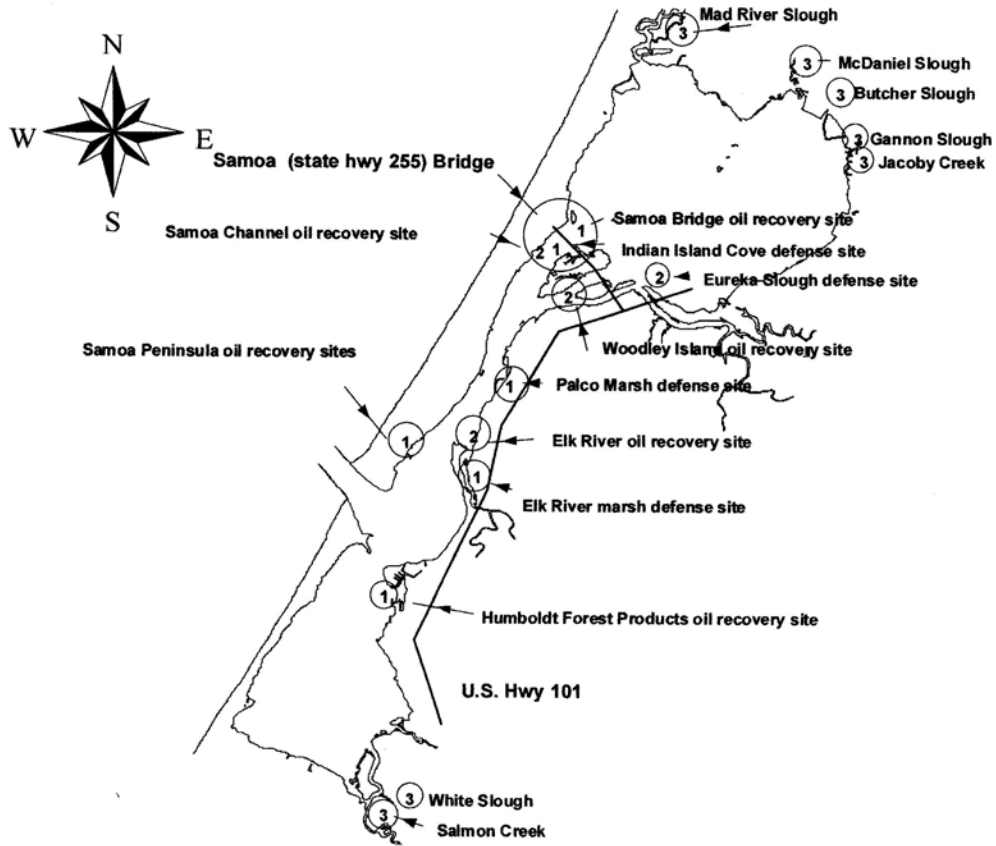
5. Simpson Paper Co., wharf. Plant is currently closed. 2nd right turn off Bay St., off New Navy Base Rd. leads to 24 hour gate with guard. Good staging area with easy access from town of Fairhaven. See gate guard. Fire Dept. at Fairhaven also has a key to this staging area.
6. Road access to beach. Left turn onto Lincoln Avenue off New Navy Base Road at town of Fairhaven, about 4 miles S. of State HWY 255 (Samoa bridge). Turn right on Duprey Street and continue to beach.
7. Humboldt County public launching ramp. Left turn off New Navy Base road about 4.5 miles S. of State HWY 255 (Samoa Bridge).
8. USCG boat station pier. About 5 miles S. of State HWY 255 (Samoa Bridge) on New Navy Base Road.
9. City of Eureka launching ramp. Off Waterfront Drive under Samoa bridge.
 - City of Eureka, K Street Pier.
 - City of Eureka, J Street Pier.
 - Nor-Cal Seafoods, I Street wharf.
 - Fishermans Cooperative Wharf. Foot of D and F Streets extended.
 - Humboldt Bay Harbor Cruise dock. Foot of C Streets extended.
 - Coast Oyster pier. Foot of A and D Streets extended.
 - Eureka Ice and Cold Storage Wharf. Foot of A Street extended.
10. City of Eureka, Commercial Street wharf. Foot of Commercial Street.
 - City of Eureka, Small craft harbor and launching ramp.
 - City of Eureka, Humboldt Dock B. Foot of Washington Street extended north.
 - Pacific Affiliates Dock. Foot of Washington Street extended south.
 - Unocal Eureka Wharf. Foot of 14th street extended north.
 - Eureka Forest Products wharf. Foot of 14th street.
11. City of Eureka, Del Norte Street public fishing pier. Foot of Del Norte Street.
12. Chevron USA, Eureka wharf. Foot of Truesdale Street.
13. King Salmon. Private launching facilities. Shoreline access. King Salmon exit from US Hwy 101 about 2 miles S. of Eureka.
14. Humboldt Bay Forest Products wharf. G Street, Fields Landing.
 - South Bay Marina Fields Landing Pier.
 - Eureka fisheries wharf G Street, Fields Landing.
 - Public Launching ramp. Railroad Ave, Fields Landing.
 - Humboldt Marine Services wharf. Depot Road, Fields Landing.

Useful Contact Numbers

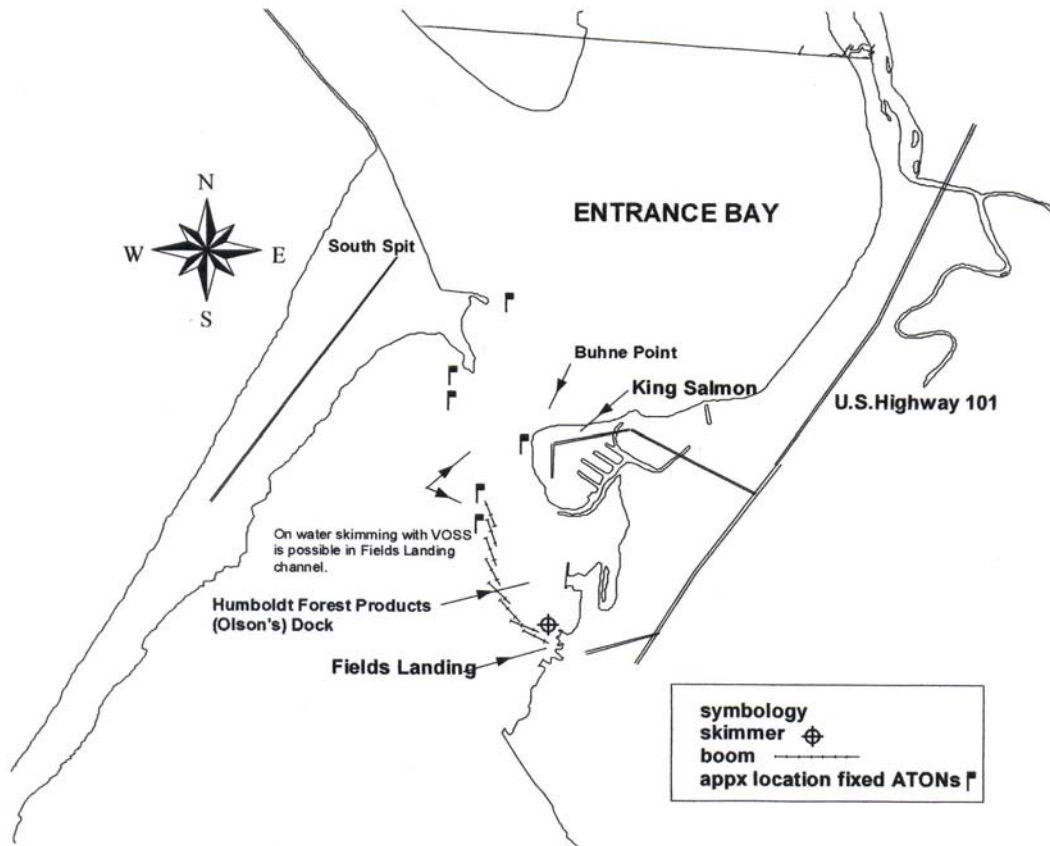
NAME	PHONE NUMBER	24 HOUR NUMBER
Arcata Police Dept	822-2428	822-2424
Caito Fisheries	443-0550	441-4054 (EurekaPD)
California Dept of Fish and Game	(916) 445-0045	(916) 445-0045
California Highway Patrol	822-5981	443-4395
Chevron	444-7850	441-4054(Eureka PD)
City of Arcata	822-6918	822-2424(Arcata PD)
City of Trinidad	677-0223	677-0133
City of Eureka	441-4206 or 4187	441-4054(Eureka PD)
Coastal Commission	415-904-5245	415-904-5245
Coast Seafood	442-2947	442-3779
Emerald Pacific Seafoods	fax 839-3465	499-0517
Eureka Fisheries	443-1673	441-4054(Eureka PD) 445-7251(Sheriff)
Eureka Police Dept.	441-4060	441-4054
Humboldt Bay Harbor Recreation and Conservation District	443-0801	443-0804
Humboldt County Office of Emergency Services	268-2500	445-7251 (Sheriff)
Humboldt County Environmental Health	445-6215	445-7251 (Sheriff)
Humboldt County Sheriff	445-7251	445-7251
Humboldt Fisherman's Marketing Association	443-0537	-----
Humboldt State Trinidad Marine Lab	826-3671	826-3456
Kuiper Mariculture	822-9057	822-5102
Louisiana Pacific Corp.	443-7511	443-4569

Marine Spill Response Corp	(510) 215-1833	1-800-259-6772
Northbay Shellfish	839-4723	839-4723
Other Docks	441-4060(Eureka PD) 445-7251(Sheriff)	441-4054(Eureka PD) 445-7251(Sheriff)
Pacific Choice Seafoods	442-2981	441-4054(Eureka PD)
PG&E	444-0700	444-0712
Sierra Pacific Industries	443-3111	445-7251(Sheriff)
Simpson Corporation	443-5300	443-9042 (Fire)
Table Bluff Tribal Council	733-5055	733-5055
US Fish and Wildlife Refuge	733-5406	443-2602
USCG Boat Station	443-2213	443-2213
USCG Air Station	839-6113	839-6113

Humboldt GRP- All Priorities and Response Locations Overview Diagram



Humboldt GRP-South Bay Priority 1 Response and Access Diagram



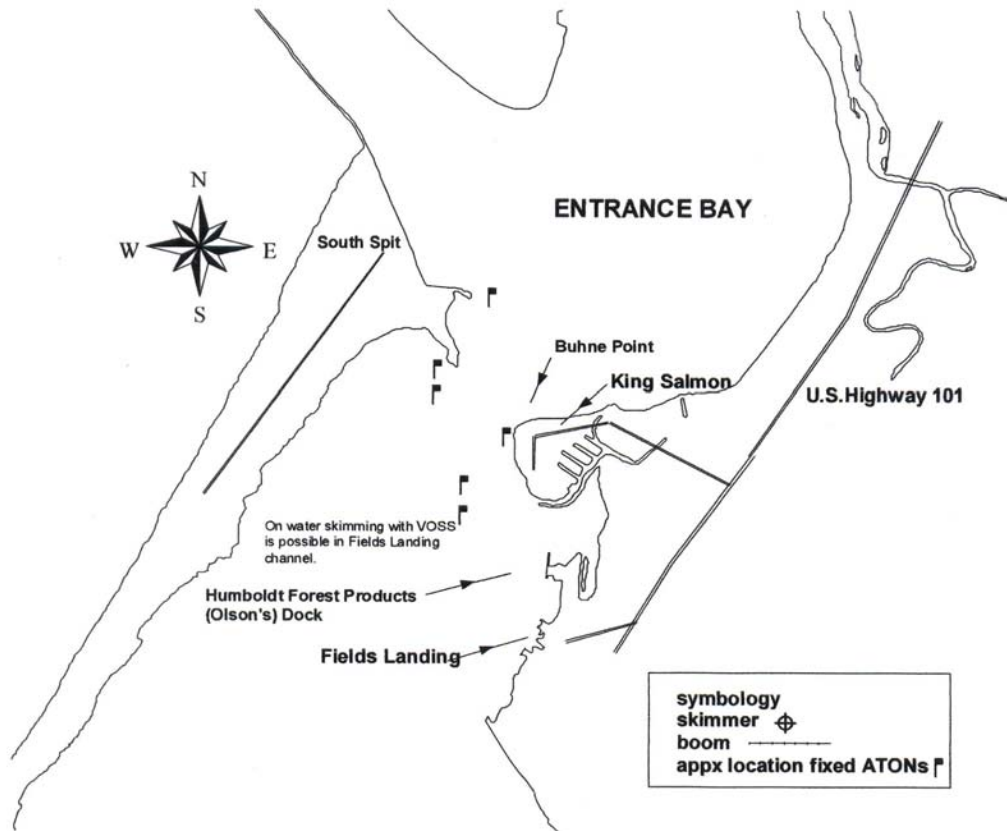
Route to South Spit:

From US Highway 101 in Eureka, go south approximately 5 miles and exit west onto Hookton road. Hookton road ends at a gate that is closed at night. Contact the Humboldt County Sheriff's Department to gain access when the gate is closed. The road beyond the gate will take you to the South Spit.

Route to Fields Landing or King Salmon:

From US Highway 101 in Eureka, go south approximately 2.5 miles and exit at the Fields Landing exit and turn right onto "G" Street. For King Salmon, take the King Salmon exit, turn right and follow the road to bay side access.

Humboldt GRP-South Bay Priority 1 Response and Access Diagram Worksheet



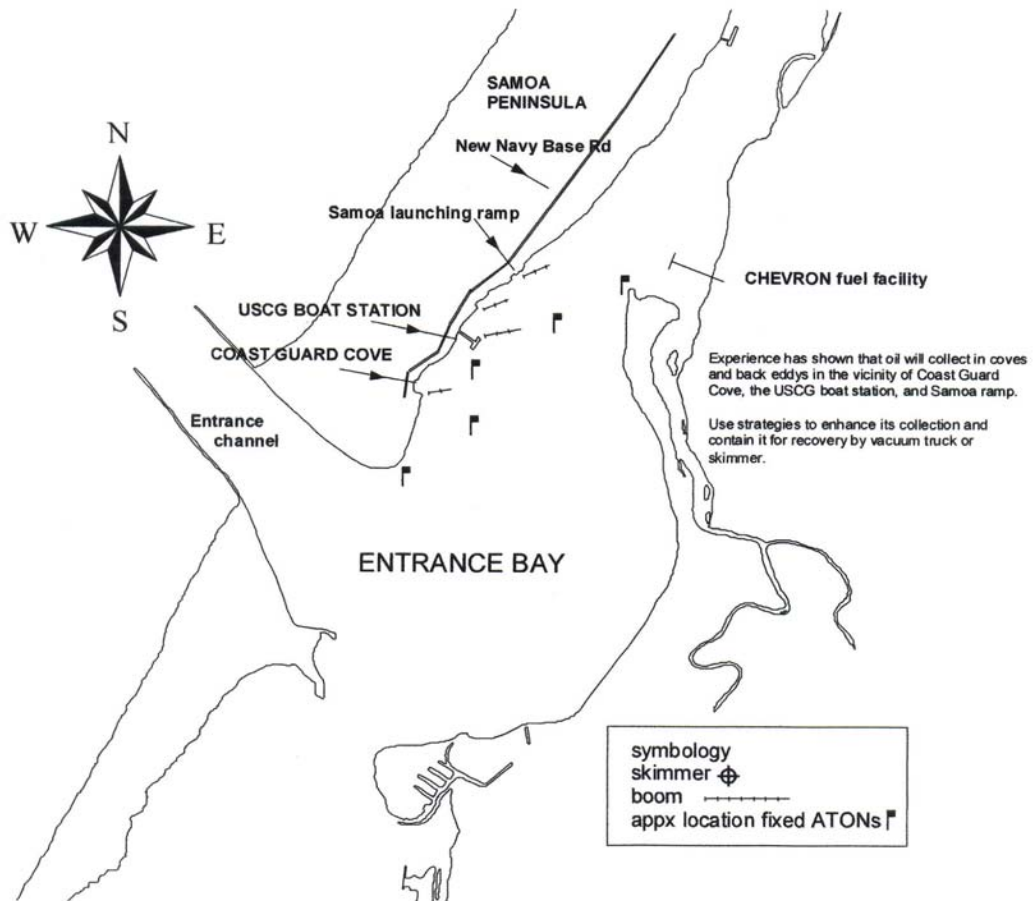
Route to South Spit:

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From US Highway 101 in Eureka, go south approximately 2.5 miles and exit at the Fields Landing exit and turn right onto "G" Street. For King Salmon, take the King Salmon exit, turn right and follow the road to bay side access.

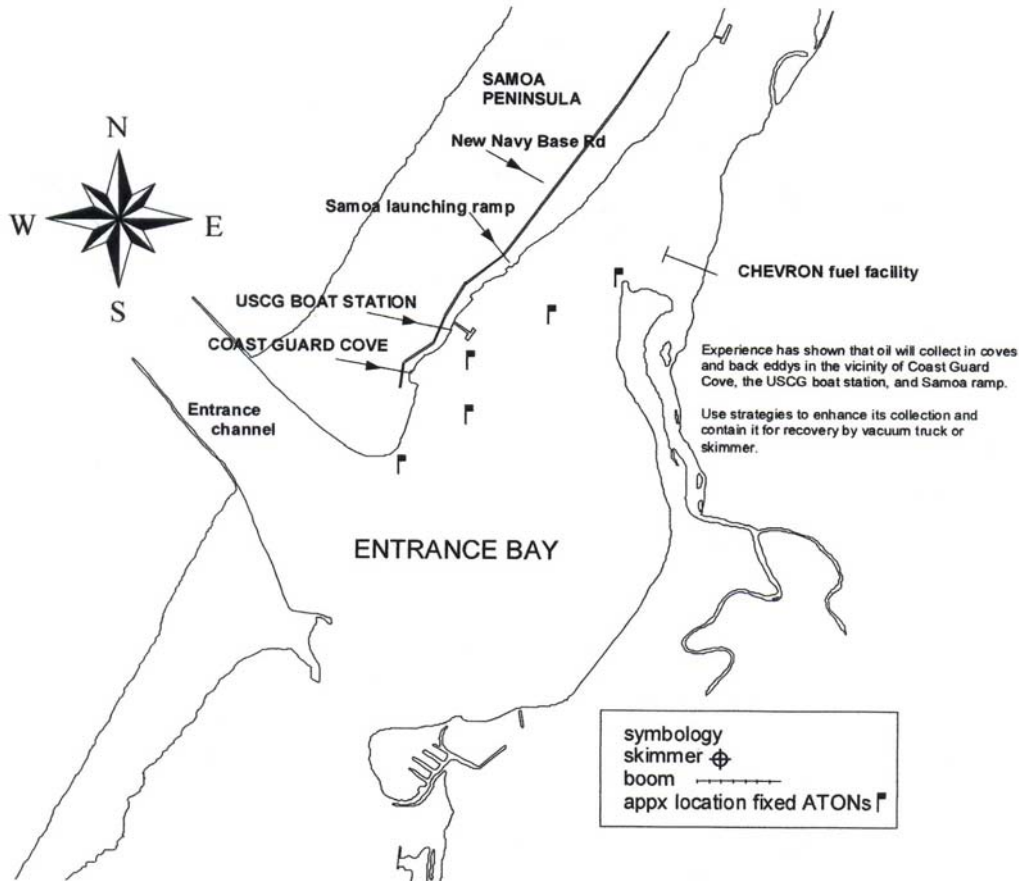
Humboldt GRP-Humboldt Bay Inlet and Inner Samoa Peninsula Priority 1 Response and Access Diagram



Route to Samoa Peninsula and the USCG Boat Station:

From US Highway 101 take State Highway 255 ("R" Street) west across the bay to New Navy Base Road. Turn left and go about 3 miles. Access to the Coast Guard Station is through a guarded gate.

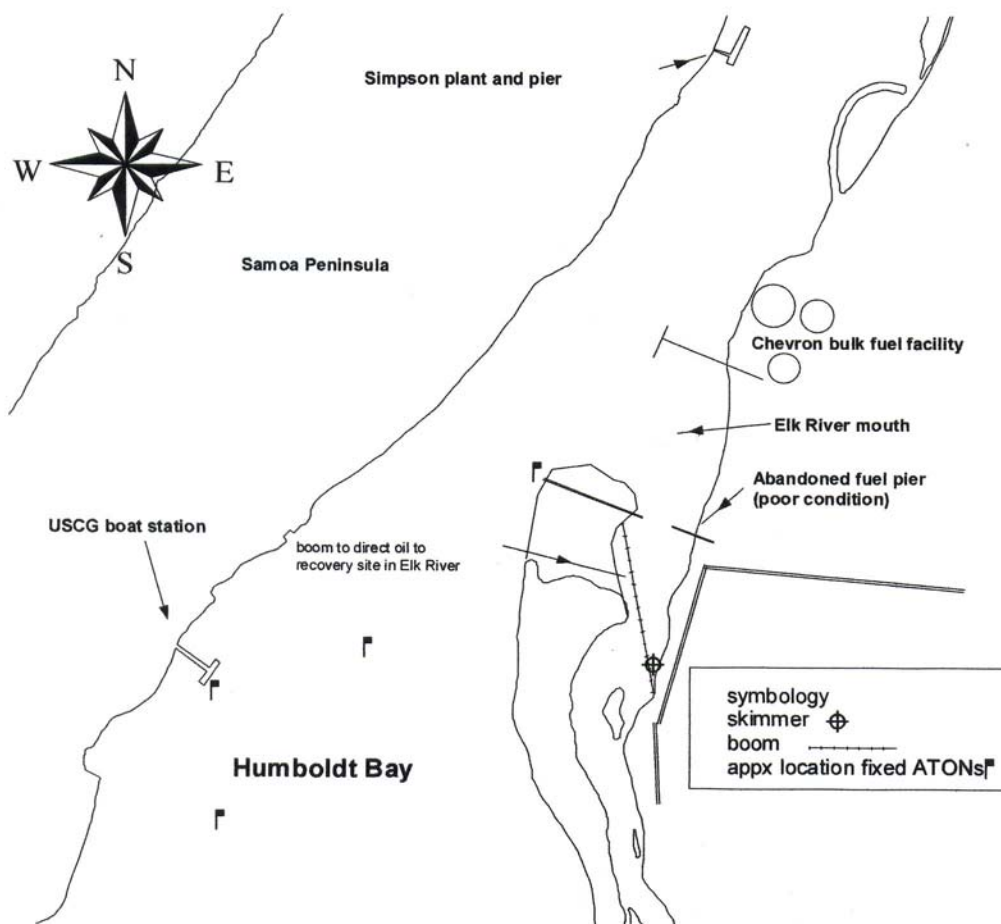
Humboldt GRP-Humboldt Bay Inlet and Inner Samoa Peninsula Priority 1 Response and Access Diagram Worksheet.



Route to Samoa Peninsula and the USCG Boat Station:

From US Highway 101 take State Highway 255 ("R" Street) west across the bay to New Navy Base Road. Turn left and go about 3 miles. Access to the Coast Guard Station is through a guarded gate.

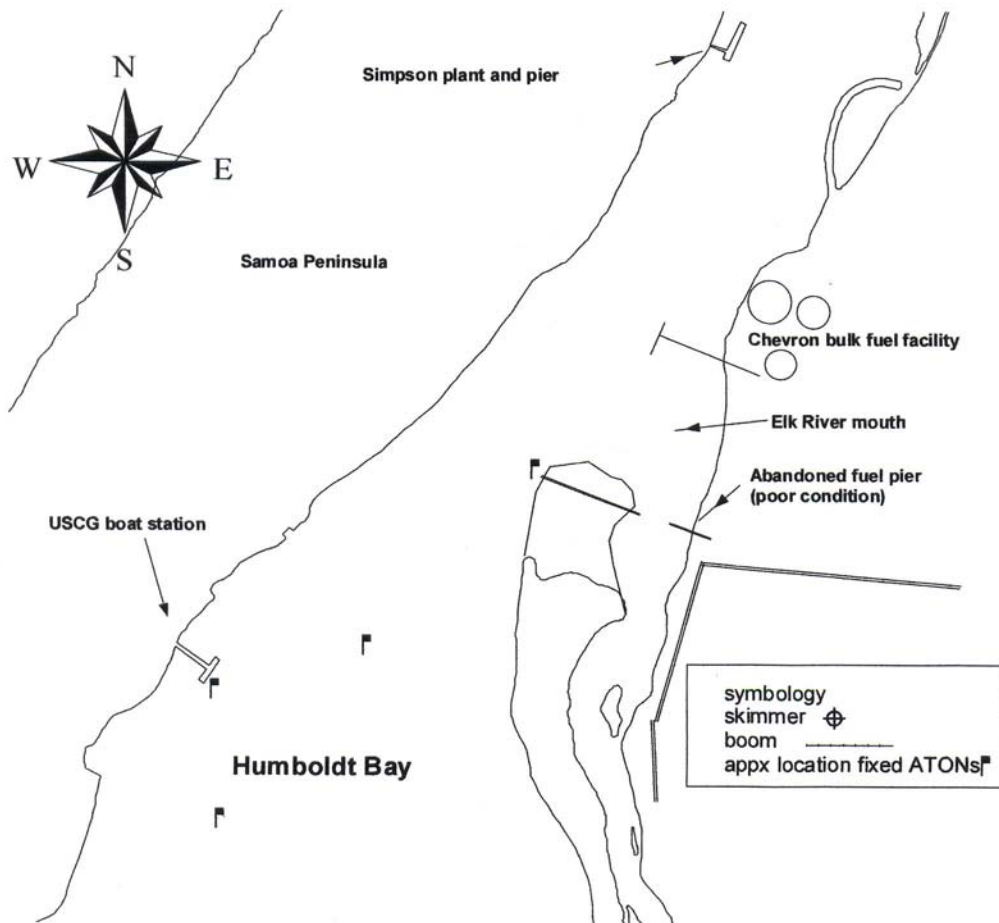
Humboldt GRP-Elk River Marsh Priority 1 Response and Access Diagram



Route to Elk River mouth:

The mouth is at the end of Hilfiker Street. Hilfiker Street is west off of US Highway 101 near the south end of town. The "Hilfiker Pipe Company" is on the corner of US Highway 101 & Hilfiker Streets.

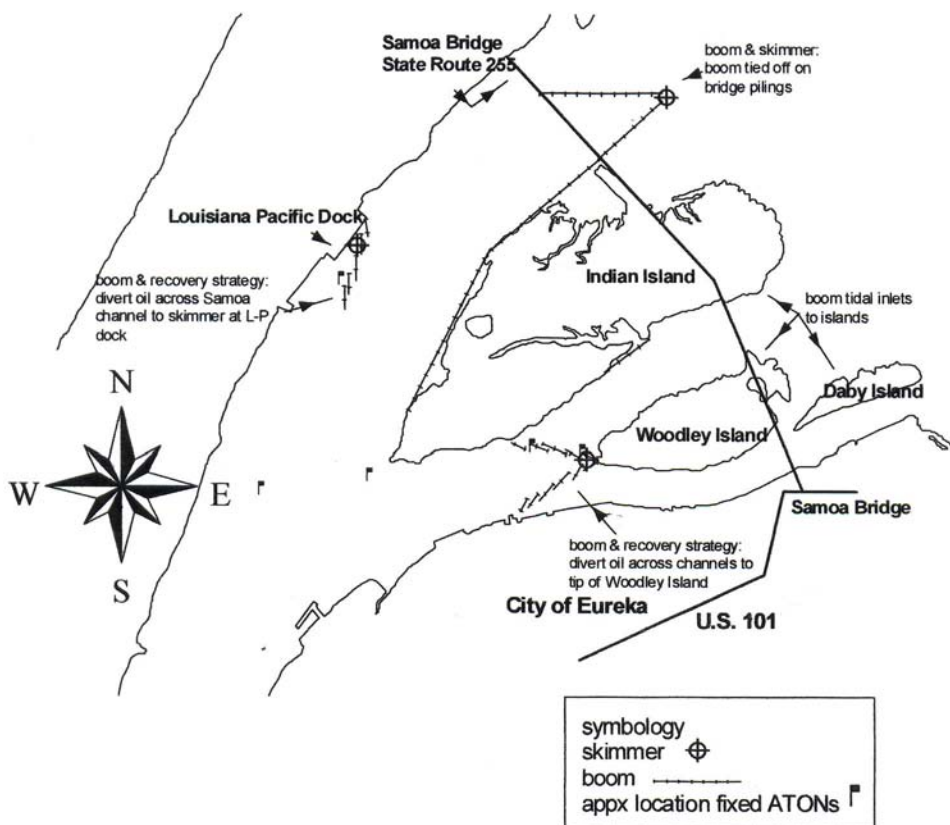
Humboldt GRP-Elk River Marsh Priority 1 Response and Access Diagram Worksheet



Route to Elk River mouth:

The mouth is at the end of Hilfiker Street. Hilfiker Street is west off of US Highway 101 near the south end of town. The "Hilfiker Pipe Company" is on the corner of US Highway 101 & Hilfiker Streets.

Humboldt GRP-North Humboldt Bay Priority 1 Response and Access Diagram



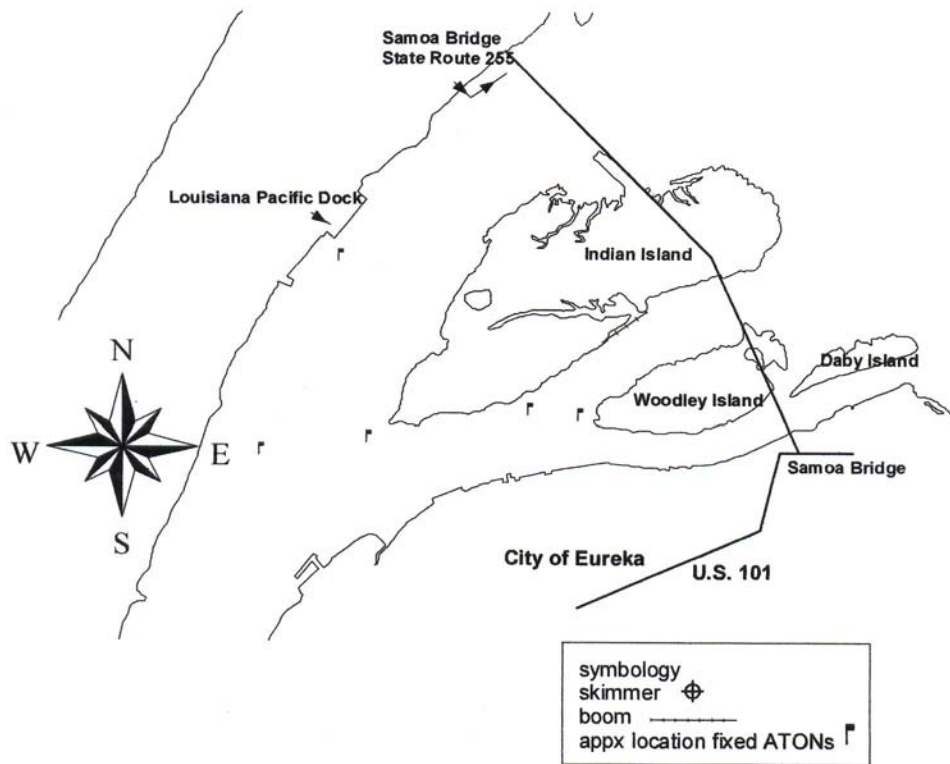
Route to the Louisiana Pacific (L.P.) Dock:

From US Highway 101 take State Highway 255 ("R" Street) west across the bay to New Navy Base Road. Turn left and go to L.P. Drive. Turn Left on L.P. Drive and go east into the L.P. mill.

Route to Woodley Island:

From US Highway 101 take State Highway 255 ("R" Street) west. Exit immediately after crossing the first bridge over the bay onto Startare Drive. Woodley Island Marina is at the end of the street.

Humboldt GRP-North Humboldt Bay Priority 1 Response and Access Diagram Worksheet



Route to the Louisiana Pacific (L.P.) Dock:

From US Highway 101 take State Highway 255 ("R" Street) west across the bay to New Navy Base Road. Turn left and go to L.P. Drive. Turn Left on L.P. Drive and go east into the L.P. mill.

Route to Woodley Island:

From US Highway 101 take State Highway 255 ("R" Street) west. Exit immediately after crossing the first bridge over the bay onto Startare Drive. Woodley Island Marina is at the end of the street.

County: **Humboldt**

Thomas Guide Location

CA Road Atlas

Latitude N

Longitude W

40 45' 30"N 124 13' 45"W

USGS Quad:

NOAA Chart:

Last Page Update :

SITE DESCRIPTION:

This response site extends from the cove directly north of the Samoa public launch ramp and campgrounds south about one quarter mile including beaches inside of the USCG reservation. The public campground and launching ramp facility should be utilized as the staging area of operations for response crews working at this site. The Samoa spit beaches near the mouth of the bay contain a series of coves or pocket beaches where floating debris will naturally be deposited by eddies formed by the out going tidal currents. Accumulation of floating debris can be enhanced by the addition of short lengths of boom that extend from shore out into the current.

SEASONAL and SPECIAL RESOURCE CONCERN**RESOURCES OF PRIMARY CONCERN**

The resources that are at risk that can be protected using this strategy are the off shore marine birds, ducks, and marine mammals that can be impacted if floating oil leaves the bay on an out going tide. Resources inside of the bay include cultured oysters, water fowl, and encrusting intertidal organisms.

Black brant and migratory waterbirds--especially shorebirds--occur in the fall, winter, and spring. In winter it is not unusual for over 100,000 birds to use the Bay as a feeding or resting site. Off shore birds that are threatened when there is oil in the bay include Marbled murrelets, puffins, pelicans, ducks, gulls, etc.

Marine mammals found in the bay include on occasion, whales, but more typically only harbor seals.

Anadromous salmonids:

Coho (FT) and Chinook (CSC) salmon, Steelhead (FSS) and Coastal cutthroat (CSC) trout:

- spawning runs (08-06)
- juveniles/smolts (02-08)

Humboldt Bay Pacific Oyster (Crassostrea gigas) aquaculture. The north bay is home to a large and commercially successful oyster seed production and smaller grow out operation. Care should be taken to minimize impacts to these vital fisheries resources.

Extensive eel grass beds are exposed on lower tides

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

YES. Contact local tribes in the event of a spill to ensure their issues are addressed during the response.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
E		City of Eureka	(707) 441-4206
T		California State Parks	(707) 445-6547
T	Suzie Howser Dock Master	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
T	David Hull Chief Executive Officer	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
O	Troy Nicolini	National Weather Service Woodley Island	(707) 443-0574
C	Tim Parker	Redwood Shore Diving, INC	(925) 684-3967
C	Helene Rouvier	Table Bluff Reservation Wiyot Tribe	(707) 733-5055

ADDITIONAL SITE SUMMARY COMMENTS:

1-305 -A Site Strategy - Humboldt Bay Inlet and Inner Samoa Peninsula

County and Thomas Guide Location

CA Road Atlas Humboldt

NOAA CHART

1-305 -A

Latitude N Longitude W

40 45' 30 124 13' 45"

CONCERNS and ADVICE to RESPONDERS:

Last Page Update :

Oil that is not captured here on out going tides will threaten off shore marine birds and many miles of shoreline.

HAZARDS and RESTRICTIONS:

Swift currents in the channels and south towards the entrance of Humboldt bay can create hazards to navigation even when sea conditions are otherwise calm.

SITE STRATEGIES

Strategy 1-305.1 Objective: Notify PG&E when oil threatens King Salmon

Call (707)444-0700 or 444-0712 (24hours)

Strategy 1-305.2 Objective: Collect oil at natural collection sites to minimize the spread of oil around the bay and to prevent oil from exiting the bay

Install deflection boom at USCG Cove, USCG boat station, Samoa boat launching ramp, and other sites where natural collection can be enhanced with strategic boom deployments.

Note: Skimming will need to begin as soon as that equipment can be brought to these collection points, but will not be critical until oil begins to collect in skimmable amounts at the various collection points. The installation of the deflection-to-collection booms should be the primary focus of the initial response efforts that are prescribed in this strategy.

Strategy 1-305.3 Objective: On water skimming of free floating oil

Use self propelled skimmers to begin on-water oil recovery in areas where oil is still concentrated.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no type and gear	Boom boat	Skiffs punts	Skimmers No Type	Special Equipment or comment No and kinds	staff deploy	Staff tend
1-305.1	0	0	0	0	0	0	0	0	0		
1-305.2	2000	0	0	0	10 22 lb+ Danforth	2	0	1 SSS/SPS		8	
1-305.3	0	0	0	0	0	0	0	1 SPS		3	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Humboldt Bay is adjacent to Highway 101, near the cities of Arcata and Eureka. Highway 255 passes over it on the north end. This site is accessible by land by driving toward Samoa on Highway 255 and taking New Navy Base Road south to the County RV Camp site and boat launch ramp area. This response site extends from the cove directly north of the Samoa public launch ramp and campgrounds south about one quarter mile including beaches inside of the USCG reservation. The public campground and launching ramp facility should be utilized as the staging area of operations for response crews working at this site.

LAND ACCESS: Large trucks can access much of this area

WATER LOGISTICS: The water near shore is shallow, but otherwise navigable

Limitations: depth, obstruction

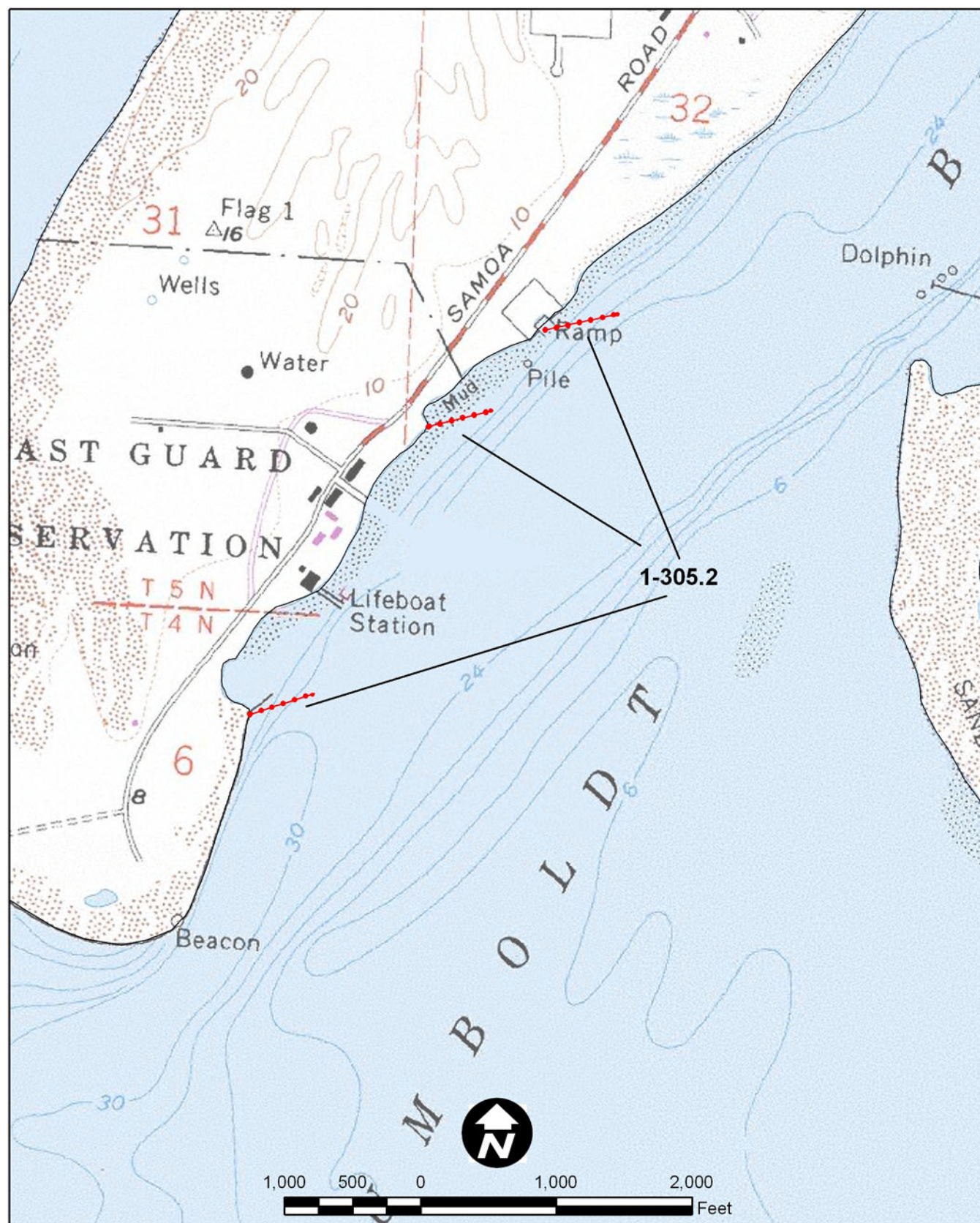
Launching, Loading, Docking and Services Available: Trailered boats can be launched directly at this site at the county boat ramp.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Historic large spill have utilized the Red Lion Inn for the Command Post, and local OSRO's have staging areas

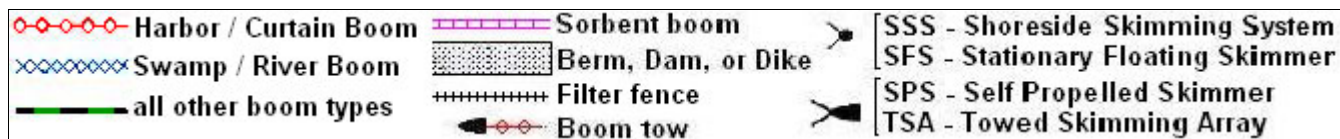
COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



CDFG-OSPR & USCG Site: 1-305 Name: Humboldt Bay Inlet & Inner Samoa Peninsula

Kris Wiese (OSPR) & Jo Sanders (OSPR) Date: July 17, 2008



1-310 -A Site Summary- North Humboldt Bay

1-310 -A

County: **Humboldt**
USGS Quad:

Thomas Guide Location
CA Road Atlas
NOAA Chart:

Latitude N
40 50' N
Longitude W
124 07' 30"W

Last Page Update :

SITE DESCRIPTION:

The response site is largely in the Samoa Channel south of the HWY 255 bridge. The boom deployment is designed to stop the spread of oil into the shallow waters of Arcata Bay on the North side of HWY 255. The strong tidal currents in the bay can bring oil from the mouth of the bay to the sensitive sites in North Bay in one or two tidal cycles.

SEASONAL and SPECIAL RESOURCE CONCERN

RESOURCES OF PRIMARY CONCERN

Humboldt Bay Hatchery, Pacific oyster, (*Crassostrea gigas*). The north bay is home to a large and commercially successful oyster seed production and smaller grow out operation. Care should be taken to minimize impacts to these vital fisheries resources.

Ducks, gulls, pelicans, cormorants, wading birds, and raptors are all at least occasionally present, with seasonal variations in migratory species but with high numbers present in the area on any average day.

Harbor seals are the only marine mammals typically found at this site.

Anadromous salmonids:

Coho (FT) and Chinook (CSC) salmon, Steelhead (FSS) and Coastal cutthroat (CSC) trouts:

- spawning runs (08-06)
- juveniles/smolts (02-08)

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

YES. Indian Island is a historic and culturally significant site that should largely be avoided by responders . Workers who must secure shoreline anchor points there should minimize work activities on the Island and exit the Island as soon as possible to minimize disturbance of soil or other injuries.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
E		City of Eureka	(707) 441-4206
O	Suzie Howser Dock Master	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
O	Troy Nicolini	National Weather Service Woodley Island	(707) 443-0574
C	Helene Rouvier	Table Bluff Reservation Wiyot Tribe	(707) 733-5055

ADDITIONAL SITE SUMMARY COMMENTS:

1-310 -A Site Strategy - North Humboldt Bay

County and Thomas Guide Location

CA Road Atlas Humboldt

NOAA CHART

1-310 -A

Latitude N Longitude W

40 50' N 124 07' 30"

CONCERNS and ADVICE to RESPONDERS:

Last Page Update :

HAZARDS and RESTRICTIONS:

Access to this site is best on the water, as the Islands are restricted access and off limits to response traffic. Most of the remaining shoreline consists of wide and often shallow mud flats that are soft, deep, and difficult to walk upon and unstable to work on.

SITE STRATEGIES

Strategy 1-310.1 Objective: On water recovery

Use self propelled skimmers to begin oil recovery to minimize the area of injury in the bay.

Strategy 1-310.2 Objective: Prevent oil from entering Arcata Bay

Direct oil with deflection boom to a swift water skimmer near the middle of the channel just north of the HWY 255 Bridge. Two lengths of boom should extend from the skimmer to the south ends of the two main channel bridge support structures. From those points, the boom should extend south terminating at the permanent channel marking structures on the east and west sides of the Samoa Channel.

Additional boom that extends from the two channel marking structures and up above the high tide line should be installed as soon as possible.

Strategy 1-310.3 Objective: Deflection to collection/ THAT MAY BE DEPLOYED SOMETIME AFTER THE INITIAL RESPONSE STAGE HAS PASSED.

Use 400' sections of boom (or less) to deflect oil from the Samoa Channel to a floating skimmer at the Louisiana Pacific Lumber dock.

Strategy 1-310.4 Objective: Add a second layer of boom for back up behind the first layer used in strategy #2

By adding a second layer of boom behind the "V" and skimmer listed in Strategy #2, any oil that was missed by the first layer of boom will have a second chance of being stopped so that it will not spread further into Arcata Bay.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no type and gear	Boom boat	Skiffs punts	Skimmers No Type	Special Equipment or comment No and kinds	staff deploy	Staff tend
1-310.1	0	0	0	0	0	0	0	1 SPS	1	3	
1-310.2		3500	0	0	5 22 lb+Danforth anchors	2	0	1 SPS	0	8	
1-310.3	2000		0	0	10 22+lbs Danforth anchors	1	0	0	0	4	
1-310.4	0	2500	0	0	0	0	0	0	0		

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Humboldt Bay is adjacent to Highway 101, near the cities of Arcata and Eureka. Highway 255 passes over it on the north end. The response areas for this site include the Samoa Channel & the neighboring island under the Highway 255 bridge. The response site is largely in the Samoa Channel south of the HWY 255 bridge. The boom deployment is designed to stop the spread of oil into the shallow waters of Arcata Bay on the North side of HWY 255.

LAND ACCESS:

WATER LOGISTICS:

Limitations: depth, obstruction

Launching, Loading, Docking

and Services Available:

The channels are deep, while the shoreline is mudflats.

There are numerous public boat ramps around the bay, with the nearest being directly under the east end of the HWY 255 Bridge in Eureka.

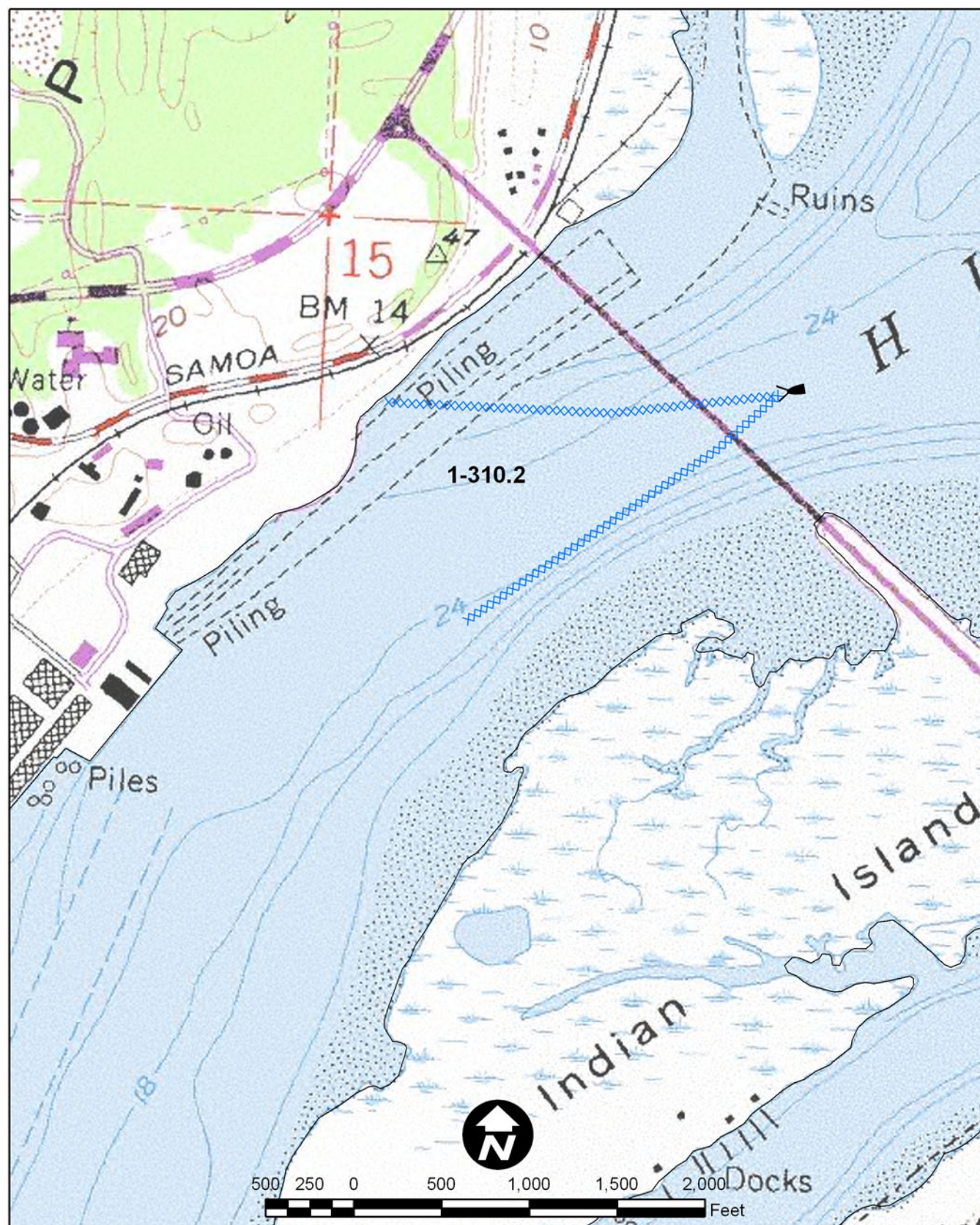
FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Public docks and boat launching facilities are available around the bay, and the OSRO's have on the water response resources pre-staged in the area.

COMMUNICATIONS PROBLEMS:

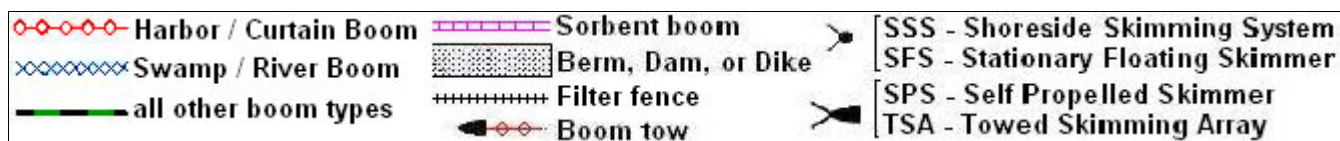
ADDITIONAL OPERATIONAL COMMENTS:

Bring a life vest and rain jacket, year round.



CDFG-OSPR & USCG Site: 1-310 Name: North Humboldt Bay

Kris Wiese (OSPR) & Jo Sanders (OSPR) Date: July 17, 2008



1-320 -A Site Summary- Mad River Slough**1-320 -A**County: **Humboldt**

USGS Quad:

Thomas Guide Location

CA Road Atlas

NOAA Chart:

Latitude N

40 53'15"N

Longitude W

124 06' 30"W

Last Page Update :

SITE DESCRIPTION:**SEASONAL and SPECIAL RESOURCE CONCERN****RESOURCES OF PRIMARY CONCERN**

Extensive slough habitat beyond the highway 255 bridge should be excluded from oiling if possible.

Lots of birds, especially Brandts

Muskrat, beaver, and harbor seals are fond of the marsh.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES**KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)**

Type	Name / Title	Organization	Phone
E		City of Eureka	(707) 441-4206
O	Suzie Howser Dock Master	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
O	Troy Nicolini	National Weather Service Woodley Island	(707) 443-0574
C	Helene Rouvier	Table Bluff Reservation Wiyot Tribe	(707) 733-5055

ADDITIONAL SITE SUMMARY COMMENTS:

1-320 -A Site Strategy - Mad River Slough

County and Thomas Guide Location

NOAA CHART

CA Road Atlas Humboldt

1-320 -A

Latitude N Longitude W

40 53'15 124 06' 30"

CONCERNS and ADVICE to RESPONDERS:

Last Page Update :

HAZARDS and RESTRICTIONS:

Shallow water at low & high tides

SITE STRATEGIES

Strategy 1-320.1 Objective: Exclusion booming to exclude the oil from the site.

Stretch a boom from one side of the channel to the other. Workers may have to walk upon the mudflats to complete this installation. Hip waders and extreme caution is advised when walking on these goey mudflats.

Strategy 1-320.2 Objective: Collect oil when a significant quantity is present.

Collect oil from the waters surface by employing a skimmer.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no type and gear	Boom boat	Skiffs punts	Skimmers No Type	Special Equipment or comment No and kinds	staff deploy	Staff tend
1-320.1	1200	100	0	1200	4 22lb+ Danforth	0	1	0		6	
1-320.2	0	0	0	0	0	0	0	1 SSS	0	2	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Mad River slough is accessible by land from Highway 255, or by shallow draft boat in the northern end of the Samoa channel of Humboldt Bay.

LAND ACCESS:

WATER LOGISTICS:

Limitations: depth, obstruction

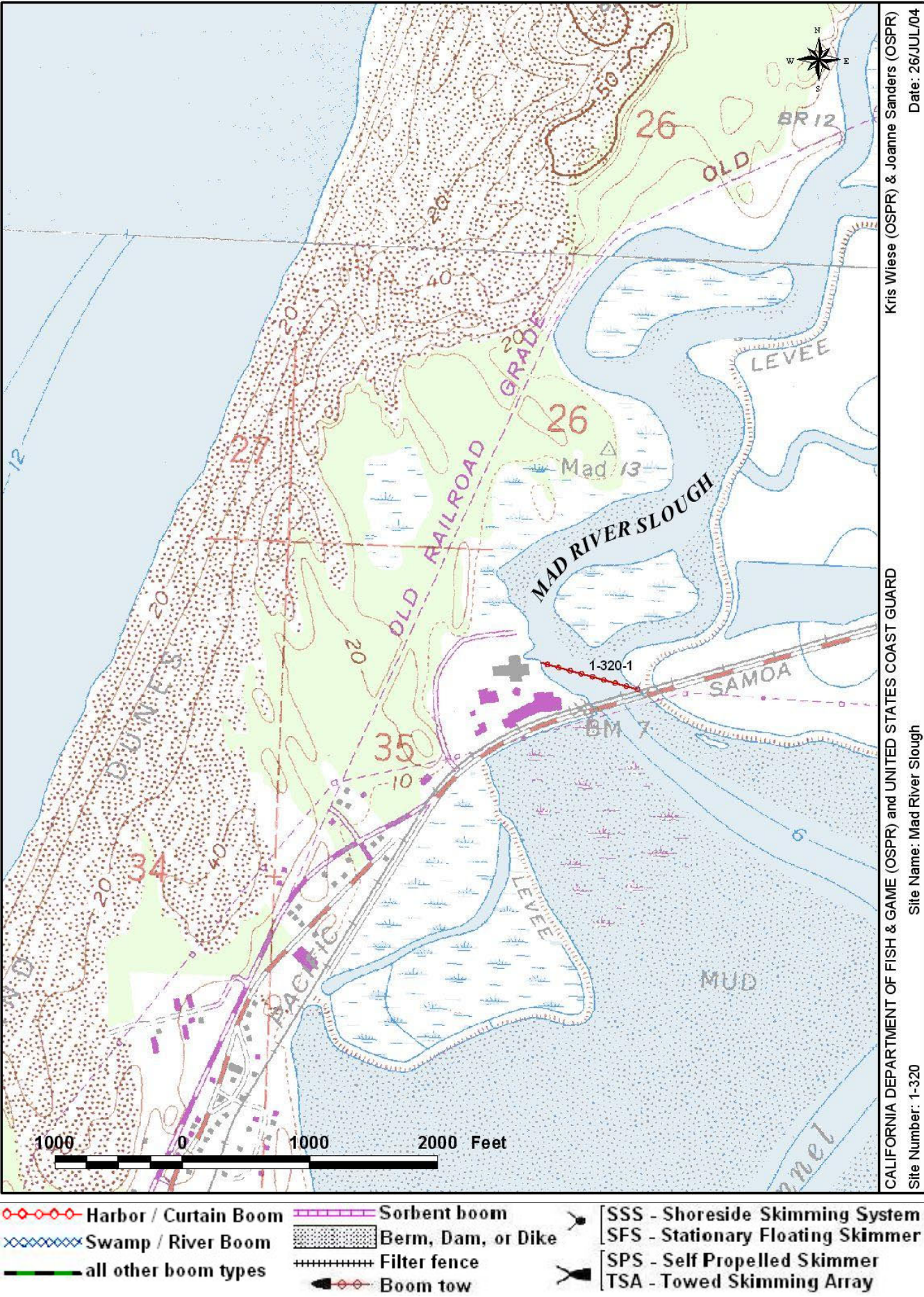
Launching, Loading, Docking

and Services Available:

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



County: **Humboldt**
USGS Quad:

Thomas Guide Location
CA Road Atlas
NOAA Chart:

Latitude N Longitude W
40 41' 50" 124 13' 20"W

Last Page Update :

SITE DESCRIPTION:

Site is shallow; and most of it will be exposed mudflats at lower tides. Strong tidal movements will make spill control very challenging in this habitat.

SEASONAL and SPECIAL RESOURCE CONCERN**RESOURCES OF PRIMARY CONCERN**

Extensive eel grass beds are the subject of much public interest and concern. Black Brandt use these areas for foraging in winter.

Black Brandt

Anadromous salmonids:

Coho (FT) and Chinook (CSC) salmon, Steelhead (FSS) and Coastal cutthroat (CSC) trouts:

- spawning runs (08-06)
- juveniles/smolts (02-08)

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Yes

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
E		City of Eureka	(707) 441-4206
O	Suzie Howser Dock Master	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
O	Troy Nicolini	National Weather Service Woodley Island	(707) 443-0574
C	Helene Rouvier	Table Bluff Reservation Wiyot Tribe	(707) 733-5055

ADDITIONAL SITE SUMMARY COMMENTS:

1-324 -A Site Strategy - Arcata Bay Sloughs

County and Thomas Guide Location

CA Road Atlas Humboldt

NOAA CHART

1-324 -A

Latitude N Longitude W

40 41' 50 124 13' 20"

CONCERNS and ADVICE to RESPONDERS:

Last Page Update :

HAZARDS and RESTRICTIONS:

Much of the bay is shallow with abraded channels at low tide. Extensive oyster culture near the Samoa Channel should be avoided by boat traffic.

SITE STRATEGIES

Strategy 1-324.1 Objective: Exclude oil from entering surrounding sloughs, especially Jacoby Creek

Exclusion boom the mouth of the creek.

Strategy 1-324.2 Objective: Exclude oil from entering surrounding sloughs, especially Gannon Slough

Exclusion boom the mouth of the slough.

Strategy 1-324.3 Objective: Exclude oil from entering surrounding sloughs, especially Butcher slough.

Exclusion boom the mouth of the slough.

Strategy 1-324.4 Objective: Exclude oil from entering surrounding sloughs, especially McDaniels slough.

Exclusion boom the mouth of the slough.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no tvpe and gear	Boom boat	Skiffs punts	Skimmers No Type	Special Equipment or comment No and kinds	staff deploy	Staff tend
1-324.1	500	100	0	100	0	0	0	0	Stakes, shovels, hammers	6	
1-324.2	500	100	0	100	0	0	0	0	Stakes, shovels, hammers	6	
1-324.3	300	50	0	100	0	0	0	0	Stakes, shovels, hammers	6	
1-324.4	150	50	0	50	0	0	0	0	Stakes, shovels, hammers	6	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Arcata bay is at the northern end of Humboldt Bay, and adjacent to Highway 101, near the cities of Arcata and Eureka. Highway 255 passes over it on the south end of Arcata bay.

LAND ACCESS:

WATER LOGISTICS:

Limitations: depth, obstruction

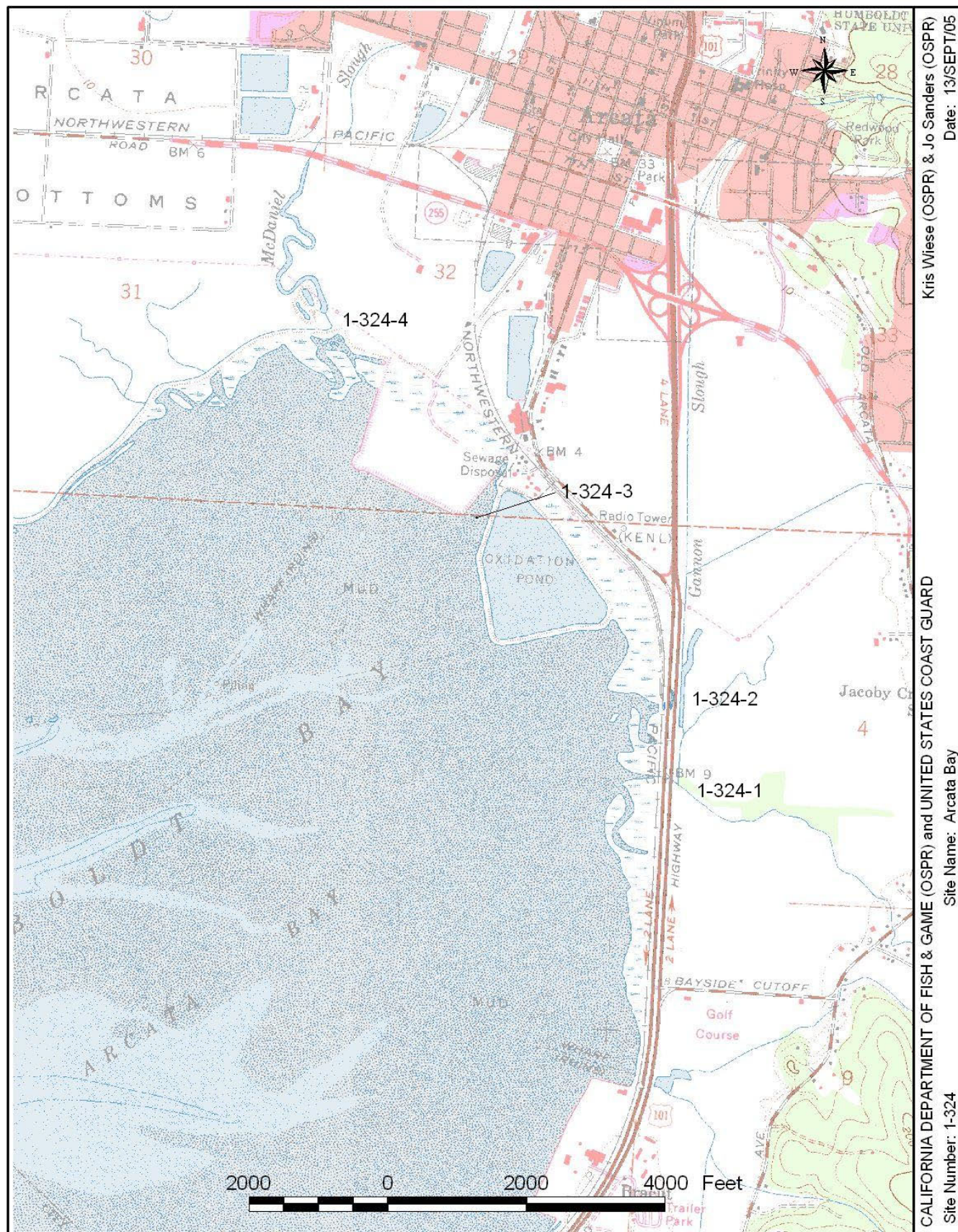
Launching, Loading, Docking

and Services Available:

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Kris Wiese (OSPR) & Jo Sanders (OSPR)
Date: 13/SEPT/05

CALIFORNIA DEPARTMENT OF FISH & GAME (OSPR) and UNITED STATES COAST GUARD
Site Name: Arcata Bay

Site Number: 1-324

County: **Humboldt**

USGS Quad:

Thomas Guide Location

CA Road Atlas

NOAA Chart:

Latitude N

40 48' 20"

Longitude W

124 08'25"W

Last Page Update :

SITE DESCRIPTION:

The response site is north west of the Hwy 101 bridge and extends to the mouth of the slough which is directly east of Daby Island. The slough extends a large distance east of the 101 HWY bridge. Any response should try and exclude oil from moving with the tides beyond the HWY 101 bridge. Eureka slough is a large tidal slough on the norther end of the city of Eureka. The water is shallow in much of the slough and large percentages of the total volume are exchanged on average tide cycles.

SEASONAL and SPECIAL RESOURCE CONCERN**RESOURCES OF PRIMARY CONCERN**

Extensive marsh habitat east of the HWY 101 bridge and just upstream of the mouth of the slough makes this site a prime target for exclusion booming.

Numerous shore birds and water fowl can be present at various times of the year.

Salmonids are historic and current residents in these waters. Up stream barriers and development have not improved survival of these cold water fishes.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

YES. River mouths and Daby Island have historic and cultural significance. Minimize shoreline disturbance during any response activities.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
E		City of Eureka	(707) 441-4206
O	Suzie Howser Dock Master	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
O	Troy Nicolini	National Weather Service Woodley Island	(707) 443-0574
	Garr Nielsen Chief of Police	Eureka Police Department	(707) 441-4095
C	Helene Rouvier	Table Bluff Reservation Wiyot Tribe	(707) 733-5055

ADDITIONAL SITE SUMMARY COMMENTS:

1-326 -A Site Strategy - Eureka Slough

County and Thomas Guide Location

CA Road Atlas Humboldt

NOAA CHART

1-326 -A

Latitude N Longitude W

40 48' 20 124 08'25"

CONCERNS and ADVICE to RESPONDERS:

Last Page Update :

HAZARDS and RESTRICTIONS:

Shallow water at low tide

SITE STRATEGIES

Strategy 1-326.1 Objective: Exclude oil from the slough.

Proposed amendment 5/31/2007

Exclusion boom the mouth of the slough. The boom can be deployed either to exclude oil from entering or in a manner that diverts oil to the shore behind the Target store where it can be collected with a skimmer. The response area behind the Target store is accessible and large enough to allow vacuum trucks to work there. Extensive tidal flats at lower tides will make boom deployment difficult at this site.

This update changes only the descriptive response language, and possible deployment tactics. It does not change the amount of equipment needed to respond at this site.

Strategy 1-326.2 Objective: Collect oil

Proposed amendment 5/31/2007 (Equipment neutral)

Collect oil using a skimmer. The oil should be diverted from out of the channel and to the small skiff launch ramp behind the Target Store. This site is accessible with a vacuum truck, if needed.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no type and gear	Boom boat	Skiffs punts	Skimmers No Type	Special Equipment or comment No and kinds	staff deploy	Staff tend
1-326.1	1000	200	0	100	0	1	0			10	
1-326.2		1000	0	100	0	1	0	1 sss	1 collection and containmant package	10	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Eureka slough is just around the corner from the City of Eureka launch ramp on waterfront drive. A small skiff launch ramp behind the Target store near the 101 HWY bridge could be used for site access and boom deployments. The response site is north west of the Hwy 101 bridge and extends to the mouth of the slough which is directly east of Daby Island. The slough extends a large distance east of the 101 HWY bridge. Any response should try and exclude oil from moving with the tides beyond the HWY 101 bridge.

LAND ACCESS: Easy drive up access behind the Target store for large trucks.

WATER LOGISTICS: Water depths are shallow over most of this response area.

Limitations: depth, obstruction

Launching, Loading, Docking and Services Available: Boat launching for eastern response efforts can be made at the foot of the 255 HWY bridge. Skiffs can be launched at the ramp behind the Target store.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

The Target parking lot behind the store is large enough for staging local response equipment only.

COMMUNICATIONS PROBLEMS:

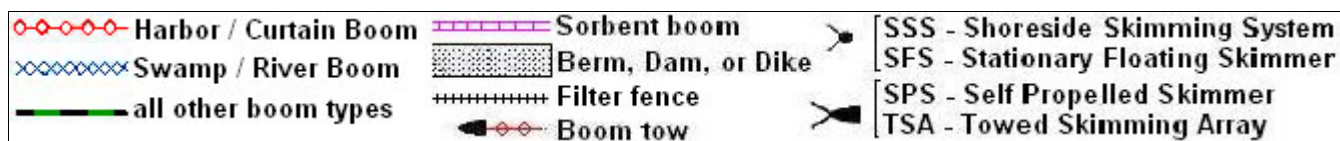
ADDITIONAL OPERATIONAL COMMENTS:

Contact the Target store manager when using this site for response purposes.



CDFG-OSPR & USCG Site: 1-326 Name: Eureka Slough

Kris Wiese (OSPR) & Jo Sanders (OSPR) Date: July 17, 2008



1-328 -A Site Summary- Woodley Island**1-328 -A**County: **Humboldt**
USGS Quad:Thomas Guide Location
CA Road Atlas
NOAA Chart:Latitude N
40 48' 35"
Longitude W
124 09' 35"W

Last Page Update :

SITE DESCRIPTION:

This response site is designed to stop oil on an incoming tide from moving further up the Eureka channel towards Arcata bay. The response area is the two bifurcating channels at the south west tip of the Island. Oil should be stranded on shore as near to this the tip of Island as is feasible under prevailing response conditions. The stranding site is directly in front and around the statue of the mariner at the south western tip of the Island. Oil from the middle channel should be diverted to the west side of the island into the natural collection cove there.

SEASONAL and SPECIAL RESOURCE CONCERN**RESOURCES OF PRIMARY CONCERN**

An extensive public boat dock and complex salt marsh are all present at Woodley Island.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

YES

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
E		City of Eureka	(707) 441-4206
T	Suzie Howser Dock Master	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
T	David Hull Chief Executive Officer	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
O	Troy Nicolini	National Weather Service Woodley Island	(707) 443-0574
C	Helene Rouvier	Table Bluff Reservation Wiyot Tribe	(707) 733-5055

ADDITIONAL SITE SUMMARY COMMENTS:

1-328 -A Site Strategy - Woodley Island

County and Thomas Guide Location

CA Road Atlas Humboldt

NOAA CHART

1-328 -A

Latitude N Longitude W

40 48' 35 124 09' 35"

CONCERNS and ADVICE to RESPONDERS:

Last Page Update :

HAZARDS and RESTRICTIONS:

The south west tip of Woodley Island near the Mariners statue is very shallow at high tide and exposed at moderate and lower tides.

SITE STRATEGIES

Strategy 1-328.1 Objective: Boom, collect and skim oil out of the environment.

Diversion boom oil from out of the Eureka Channel to a skimmer at Woodley Island.

Strategy 1-328.2 Objective: Boom, collect and skim oil out of the environment

Place a boom from the south western shore of Indian Island to a skimmer on Woodley Island.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no tvpe and gear	Boom boat	Skiffs punts	Skimmers No Type	Special Equipment or comment No and kinds	staff deploy	Staff tend
1-328.1	1200	0	0	0	4 22 lb+ Danforth anchors	1		1 SPS 0	Stakes, shovels, hammer	3	
1-328.2	1200	0	0	0	4 22 lb+ Danforth anchors	1		0 1	SPS	5	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Humboldt Bay is adjacent to Highway 101, near the cities of Arcata and Eureka. Highway 255 passes over it on the north end, and the exit to Woodley Island is off of Highway 255 about 1/2 mile northeast of Eureka at Highway 101. This response site is designed to stop oil on an incoming tide from moving further up the Eureka channel towards Arcata bay. The response area is the two bifurcating channels at the south west tip of the Island. Oil should be stranded on shore as near to this the tip of Island as is feasible under prevailing response conditions.

LAND ACCESS:

WATER LOGISTICS:

Limitations: depth, obstruction

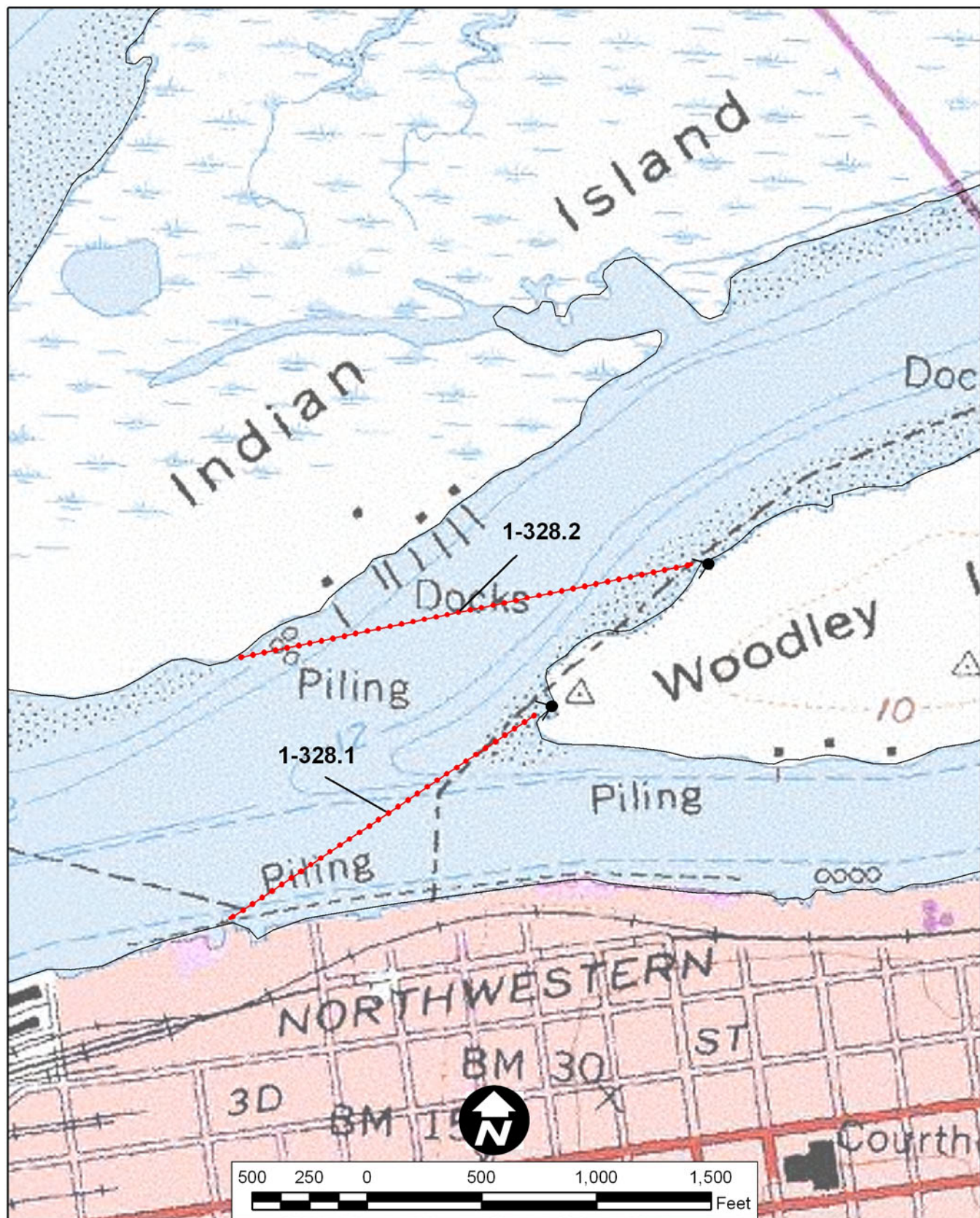
Launching, Loading, Docking

and Services Available:

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

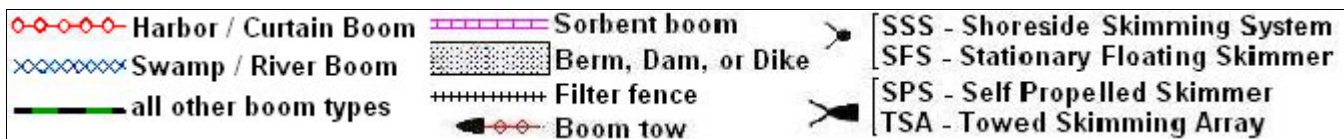
COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



CDFG-OSPR & USCG Site: 1-328 Name: Woodley Island

Kris Wiese (OSPR) & Jo Sanders (OSPR) Date: July 17, 2008



County: **Humboldt**

USGS Quad:

Thomas Guide Location

CA Road Atlas

NOAA Chart:

Latitude N

40 48' 55"

Longitude W

124 10' 05"W

Last Page Update :

SITE DESCRIPTION:

Indian Island is a low elevation island that has large wetlands that can be submerged at higher tides. The protection strategies are designed to exclude oil from the interior wet lands by diversion and exclusionary booming. Largest Island in Humboldt Bay, it is a sacred site for many of the tribes of northern California. Strong tidal currents in the Samoa channel transport most of the water in and out of Arcata Bay.

SEASONAL and SPECIAL RESOURCE CONCERN

This is a popular habitat for lots of wildlife year round. Excluding oil from this site is of primary concern in Humboldt Bay. The site has significant historical and cultural value that must also be protected.

RESOURCES OF PRIMARY CONCERN

Extensive marsh system and wetlands are vulnerable to oiling. The entire island is a cultural resource for the tribes and the City of Eureka.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Sacred site for many Native Americans

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
E		City of Eureka	(707) 441-4206
T	Suzie Howser Dock Master	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
T	David Hull Chief Executive Officer	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
O	Troy Nicolini	National Weather Service Woodley Island	(707) 443-0574
C	Helene Rouvier	Table Bluff Reservation Wiyot Tribe	(707) 733-5055

ADDITIONAL SITE SUMMARY COMMENTS:

1-330 -A Site Strategy - Indian Island

County and Thomas Guide Location

CA Road Atlas Humboldt

NOAA CHART

1-330 -A

Latitude N Longitude W

40 48' 55 124 10' 05"

CONCERNS and ADVICE to RESPONDERS:

Last Page Update :

HAZARDS and RESTRICTIONS:

Sacred site. Do not enter without permission and supervision of the Wiyot Tribe.

SITE STRATEGIES

Strategy 1-330.1 Objective: Stop oil from entering the islands wetlands after a skimmer and boom have been placed in the North Bay.

Add a short leg of boom from the west shore (Anchor point) of the island and connect it to the east end of the "V" boom array that is deployed as part of the North Humboldt Bay site #1-310-2 protection strategy. That terminal end is attached to an existing pile structure on the edge of the Samoa Channel.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no type and gear	Boom boat	Skiffs punts	Skimmers No Type	Special Equipment or comment No and kinds	staff deploy	Staff tend
1-330.1		500	0	0	0	1	0	0	0	2	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Indian island is only accessible by boat. Do not walk on the Island. Indian Island is a low elevation island that has large wetlands that can be submerged at higher tides. The protection strategies are designed to exclude oil from the interior wet lands by diversion and exclusionary booming.

LAND ACCESS: N/A

WATER LOGISTICS:

Limitations: depth, obstruction

The island is accessible by boat, and depth is variable.

Launching, Loading, Docking

and Services Available:

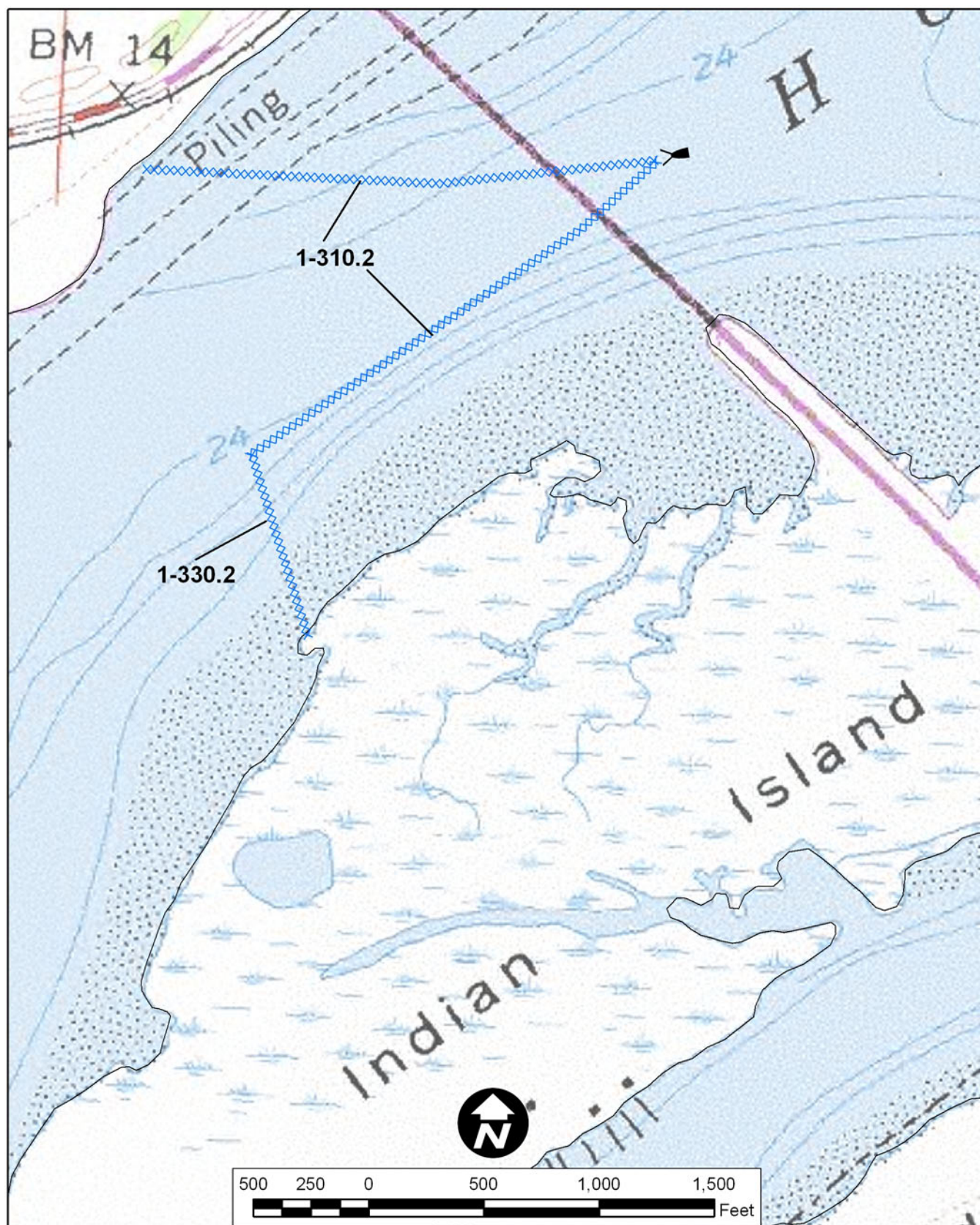
There are docks on the east side, but permission to access the island should be obtained before landing there.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

This is not a location for a staging area or a field post.

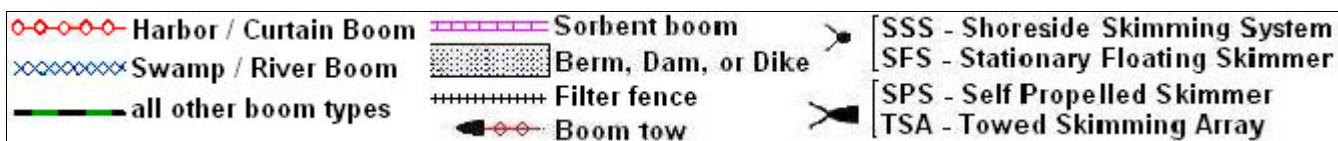
COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



CDFG-OSPR & USCG Site: 1-330 Name: Indian Island

Kris Wiese (OSPR) & Jo Sanders (OSPR) Date: July 17, 2008



County: **Humboldt**
USGS Quad: **Eureka**

Thomas Guide Location
CA Road Atlas
NOAA Chart: **18622**

Latitude N
40 47'
Longitude W
124 11'

Last Page Update : 7/1/1996

SITE DESCRIPTION:

The marsh is a mitigation project behind and adjacent to the Bayshore Mall. Saltwater marsh that is hydrokinetically connected to Humboldt Bay by three 30" culverts. Adjoining the marsh and located on the bay are eelgrass beds and exposed tidal flats.

SEASONAL and SPECIAL RESOURCE CONCERN

The marsh provides habitat for the wildlife and homeless populations around the bay.

RESOURCES OF PRIMARY CONCERN

Palco Marsh has wetlands and salt marsh habitat with some tidal influence. The flows into the marsh are muted by obstructions in the connecting culvert system.

Wading birds, shorebirds, waterfowl (01-12)

Pacific herring spawn on eelgrass in bay (11-03)

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES**KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)**

Type	Name / Title	Organization	Phone
E		City of Eureka	(707) 441-4206
O	Suzie Howser Dock Master	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
O	Troy Nicolini	National Weather Service Woodley Island	(707) 443-0574
O	Garr Nielsen Chief of Police	Eureka Police Department	(707) 441-4095
E	Scott Parsons CEO Chevron	Chevron Marine Terminal	(707) 444-7850
C	Helene Rouvier	Table Bluff Reservation Wiyot Tribe	(707) 733-5055

ADDITIONAL SITE SUMMARY COMMENTS:

1-340 -A Site Strategy - Palco Marsh

County and Thomas Guide Location
CA Road Atlas Humboldt

NOAA CHART
18622

1-340 -A

Latitude N Longitude W
40 47' 124 11'

CONCERNS and ADVICE to RESPONDERS:

Last Page Update :

HAZARDS and RESTRICTIONS:

This is a favorite gathering site for homeless folk to construct make shift shelters, camp out, and generally exist in a rent free environment.

SITE STRATEGIES

Strategy 1-340.1 Objective: Prevent oil from entering the marsh.

Install pre-fitted splash boards into the water gate to prevent tidal exchanges.

Strategy 1-340.2 Objective: Prevent oil from entering the marsh

Insure the Del Norte Street tidal gates are free from debris. Clear obstructions from the tidal gates to insure that they will close properly.

Strategy 1-340.3 Objective: Prevent oil from flowing into the marsh for Humboldt Bay

Install protective sorbents barriers at the faces of the splash boards to keep oil from passing into the culverts and into the marsh.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no tvpe and gear	Boom boat	Skiffs punts	Skimmers No Type	Special Equipment or comment No and kinds	staff deploy	Staff tend
1-340.1	0	0	0	0	0	0	0	0	7 Pre-fitted splash boards	2	
1-340.2	0	0	0	0	0	0	0	0	1 Debris hooks, shovels, pry-bar, pitchfork	2	
1-340.3	0	0	0	10	0	0	0	0		2	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

From U.S. hwy 101 southbound in Eureka (South Broadway St), take Del Norte St. (M.P. 77.250) west and continue to the foot of Del Norte Street. Gated access located at the point where the railroad tracks cross Del Norte Street (the marsh is visible at this point).

Gated access is also possible from the foot of Vigo Street or Bayshore Way (SB U.S. hwy 101 M.P.s 76.750 and 76.560). The marsh is a mitigation project behind and adjacent to the Bayshore Mall.

LAND ACCESS: Locked gates can be opened by the City of Eureka or EFD.

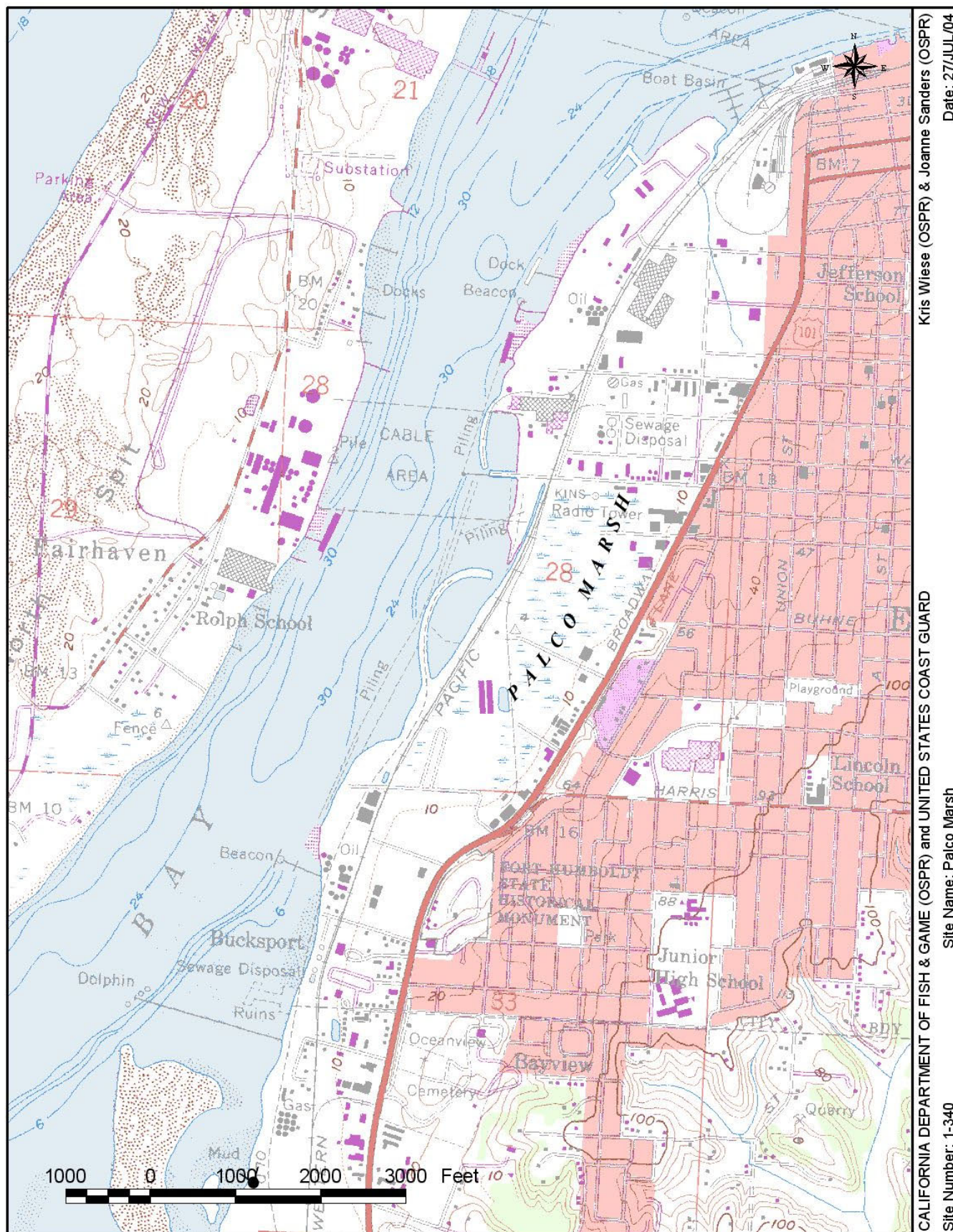
WATER LOGISTICS: No access by water. Too shallow
Limitations: depth, obstruction
Launching, Loading, Docking
and Services Available:

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

OSRO's have staging at their facilities around Humboldt Bay.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



1-345 -A Site Summary- Elk River & Marsh**1-345 -A**

County: **Humboldt**
USGS Quad: **Eureka**

Thomas Guide Location
CA Road Atlas
NOAA Chart: **18622**

Latitude N
40 46'
Longitude W
124 12'

Last Page Update : 7/1/1996

SITE DESCRIPTION:

This site extends from the inlet on Humbolt Bay and includes the upstream tidal marsh complex to the outer limits of tidal influence. The inlet consists of sheltered tidal flats with eelgrass beds. Elk River spit is fine to medium grain sand.

SEASONAL and SPECIAL RESOURCE CONCERN**RESOURCES OF PRIMARY CONCERN**

The Elk river estuary has extensive wetlands that would be difficult to clean-up if oil enters that environment.

Wading birds, shorebirds, waterfowl (01-12), migratory waterfowl and shorebirds (10-04); Black brant (10-06), Kingfishers, Egrets, raptors incl. Osprey (CSC)(01-12).

Anadromous salmonids: Coho (FT) and Chinook (CSC) salmon, Steelhead (FSS) and Coastal cutthroat (CSC) trouts:

- spawning runs (08-06)
- juveniles/smolts (02-08)

Pacific herring spawn on eelgrass (11-03).

Larval and juvenile flatfishes and herring utilize this area.

Other non-com'l fish spp. Utilize the eelgrass beds (habitat).

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES**KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)**

Type	Name / Title	Organization	Phone
E		City of Eureka	(707) 441-4206
O	Suzie Howser Dock Master	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
O	Troy Nicolini	National Weather Service Woodley Island	(707) 443-0574
	Garr Nielsen Chief of Police	Eureka Police Department	(707) 441-4095
E	Scott Parsons CEO Chevron	Chevron Marine Terminal	(707) 444-7850
C	Helene Rouvier	Table Bluff Reservation Wiyot Tribe	(707) 733-5055

ADDITIONAL SITE SUMMARY COMMENTS:

1-345 -A Site Strategy - Elk River & Marsh

County and Thomas Guide Location

CA Road Atlas Humboldt

NOAA CHART

18622

1-345 -A

Latitude N

40 46'

Longitude W

124 12'

CONCERNS and ADVICE to RESPONDERS:

Last Page Update :

HAZARDS and RESTRICTIONS:

There is extensive shoaling in this area, and a significant number of potentially submerged pilings from an old pipeline trestle in the mouth of the river.

SITE STRATEGIES

Strategy 1-345.1 Objective: Shut key-locked drop gates to prevent tidal exchange into the marsh

Keys are available at either the Chevron Terminal in Eureka or from the City of Eureka Public Works Office.

Strategy 1-345.2 Objective: Boom the mouth of Elk River to exclude oil.

Exclusion boom the river mouth and collect oil if possible.

Strategy 1-345.3 Objective: Collect oil when enough is present to skim.

Use a skimmer to collect oil from off the waters surface into collection.

Strategy 1-345.4 Objective: Deflect oil from the mouth of the river north into the quiet water on the western shore of the bay.

Deflection booming: Install a chevron extending from the northern tip of the sand spit and out (N.W. direction) to the old piles in front of the river mouth. From that point, deploy the boom (E.) into the quiet water on the western shore of Humboldt Bay and north of the river mouth. Deployed in 2008, the strategy was modified with the addition of 1000' of boom in order to reach completely across the channel at high tide.

This would be an alternative response to Strategy #2 at this site, and is intended to replace that strategy as the primary deployment to be employed at this site. The original strategy will remain as an alternative that could be used when or if this strategy is not feasible.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no type and gear	Boom boat	Skiffs punts	Skimmers No Type	Special Equipment or comment and kinds	staff deploy	Staff tend
1-345.1	0	0	0	0	0	0	0	0	1 Key	2	
1-345.2	1400	0	0	300	5 22 lb+ Danforth anchors	0	1			4	
1-345.3	0	0	0	0	0	0	0	1 SSS/SPS 0		2	
1-345.4		2400	0	0	8 22 lb+ Danforth anchors		1	0	0	4	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

From southbound U.S. hwy 101 (South Broadway Street) in Eureka, turn right at the "Coastal Access" sign at Hilfiker Lane (M.P. 75.740) and continue to the end of the street. Park on the street or in the friendly parking lot on the pristine banks of the Elk River. This site extends from the inlet on Humboldt Bay and includes the upstream tidal marsh complex to the outer limits of tidal influence.

LAND ACCESS: accessible all vehicle types incl hvy equip.

WATER LOGISTICS: The water depth is variable, probably submerged pilings.

Limitations: depth, obstruction

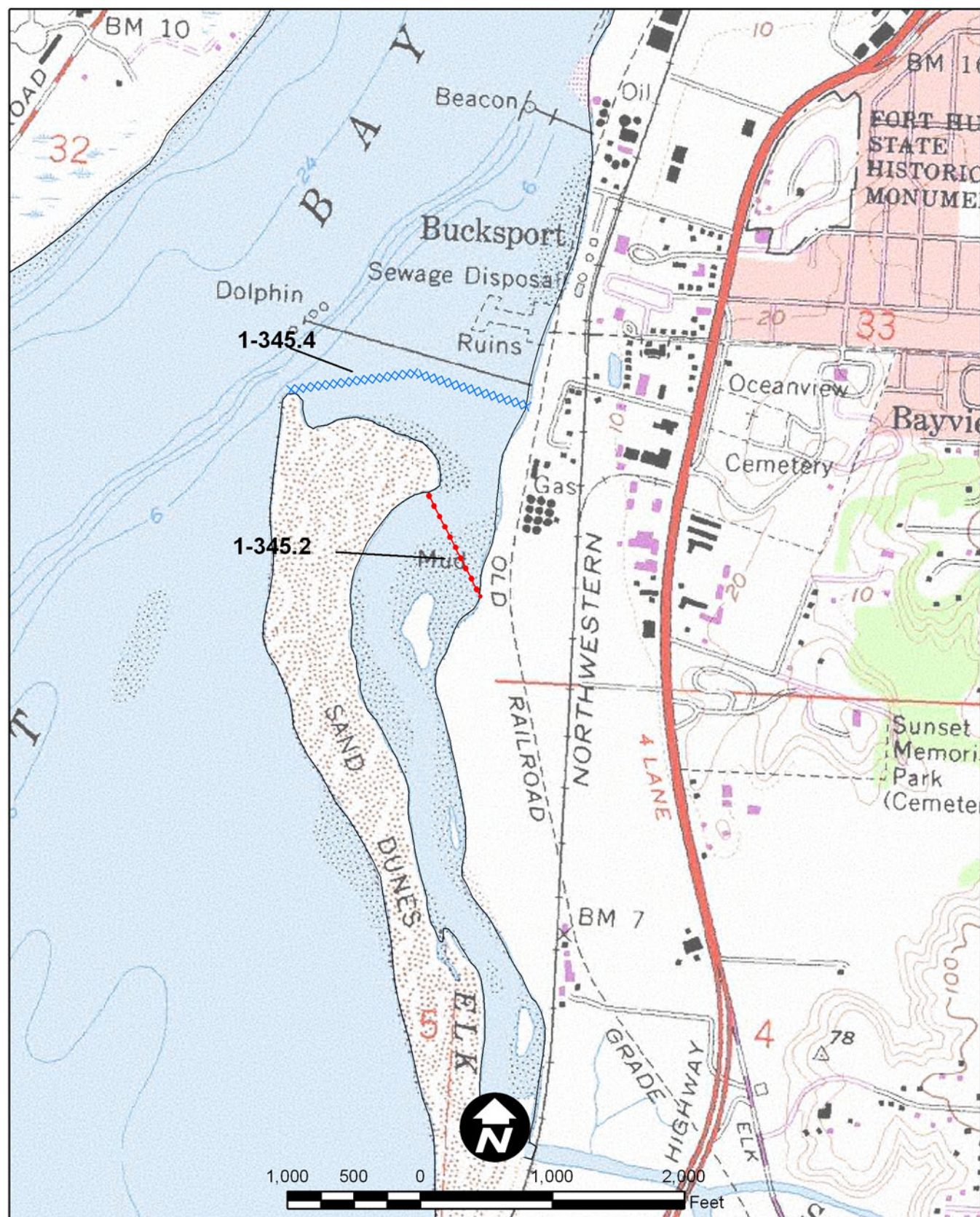
Launching, Loading, Docking and Services Available: Access is possible from Humboldt bay with low draft vessels recommended for this response location.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

There is a small parking lot near the foot of Hilfiker street where local response equipment and supplies could be staged for a response at this site.

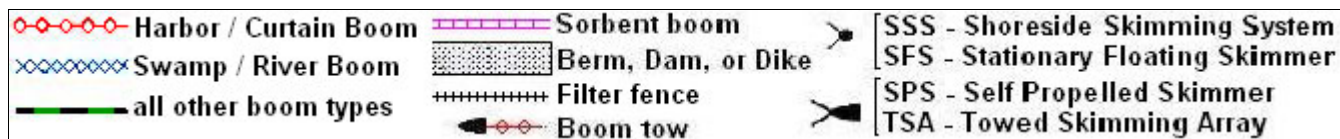
COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



CDFG-OSPR & USCG Site: 1-345 Name: Elk River and Marsh

Kris Wiese (OSPR) & Jo Sanders (OSPR) Date: July 17, 2008



1-350 -A Site Summary- South Humboldt Bay**1-350 -A**

County: **Humboldt**
USGS Quad: **Cannibal Isl., Fields Landing**

Thomas Guide Location
CA Road Atlas
NOAA Chart: **18622**

Latitude N Longitude W
40 42' 30" 124 15'

Last Page Update : 7/1/1996

SITE DESCRIPTION:

This is the protection site to collect oil that is moving into south Humboldt Bay. This response site is located in the area directly off shore from the Fields Landing Boat Ramp. Large estuary complex with extensive marshes, eelgrass meadows, and sheltered tidal flats exposed at low tide.

SEASONAL and SPECIAL RESOURCE CONCERN

The south bay is home to the Humboldt Bay National Wildlife Refuge which provides habitat for 100's of species and 1000's of individual birds including migrating waterfowl.

RESOURCES OF PRIMARY CONCERN

Eelgrass Meadow

Birds are a concern throughout the year. Coastal seabirds, wading birds, waterfowl. Important for Black brant en route to breeding grounds. California brown pelican (SE)(04-11), Marbled murrelet (FT,SE). Raptors including Bald eagle (SE); Peregrine falcon (SE), Osprey (CSC); all (01-12).

Haul outs for molting and pupping in this area

Anadromous salmonids: Coho (FT) and Chinook (CSC) salmon, Steelhead (FSS) and Coastal Cutthroat (CSC) trout:

- spawning runs (08-06)
- juveniles/smolts (pass through bay)

Larval and juvenile fish use area as rearing habitat

Benthic invertebrates including several recreationally impt. Clam species

Invertebrates

Eelgrass meadow

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Yes.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
E		City of Eureka	(707) 441-4206
O	Suzie Howser Dock Master	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
T	Eric Nelson Reserve Manager	Humboldt Bay NWR Complex	(707) 733-5406
O	Troy Nicolini	National Weather Service Woodley Island	(707) 443-0574
C	Helene Rouvier	Table Bluff Reservation Wiyot Tribe	(707) 733-5055

ADDITIONAL SITE SUMMARY COMMENTS:

1-350 -A Site Strategy - South Humboldt Bay

County and Thomas Guide Location

CA Road Atlas Humboldt

NOAA CHART

18622

1-350 -A

Latitude N Longitude W

40 42' 30 124 15'

CONCERNS and ADVICE to RESPONDERS:

Last Page Update :

HAZARDS and RESTRICTIONS:

SITE STRATEGIES

Strategy 1-350.1 Objective: Deploy boom to strand oil on shore.

Deflection boom oil to collection sites or stranding sites in the south bay.

Strategy 1-350.2 Objective: On water recovery

On water recovery using either a towed boom array or with a towed barge skimmer.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no type and gear	Boom boat	Skiffs punts	Skimmers No Type	Special Equipment or comment No and kinds	staff deploy	Staff tend
1-350.1	1200	0	0	0	5 22+lb Danforth anchors	2	0	2 SSS 0		10	
1-350.2	100	0	0	0	0		2	1 SBS 0		2	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

- Access to the shores of South Humboldt Bay are limited by extensive wetland areas, with the exception of the developed areas around Fields Landing and King Salmon.
- East side of South Bay: Go south on U.S. hwy 101 from Eureka to the King Salmon exit M.P. 73.046 and go west on Buhne Drive to King Salmon (town) and the Bay. Go south on U.S. hwy 101 from Eureka to the Fields Landing exit M.P. 70.844. Take Railroad Avenue to its end at the Bay.
- West side of South Bay: Go south on U.S. hwy 101 to Hookton Road overpass M.P. 68.116. From stop sign, continue west (straight ahead) on Hookton Road to Table Bluff Road. Continue in same direction. The road will become South Jetty and run the length of the South Jetty.
- Access by boat: Two hoist type facilities are available in King Salmon. A launching ramp (end of Railroad Ave.) and travelift (end of Depot Drive) are available in Fields Landing. This is the protection site to collect oil that is moving into south Humboldt Bay. This response site is located in the area directly off shore from the Fields Landing Boat Ramp.

LAND ACCESS:

WATER LOGISTICS:

Limitations: depth, obstruction

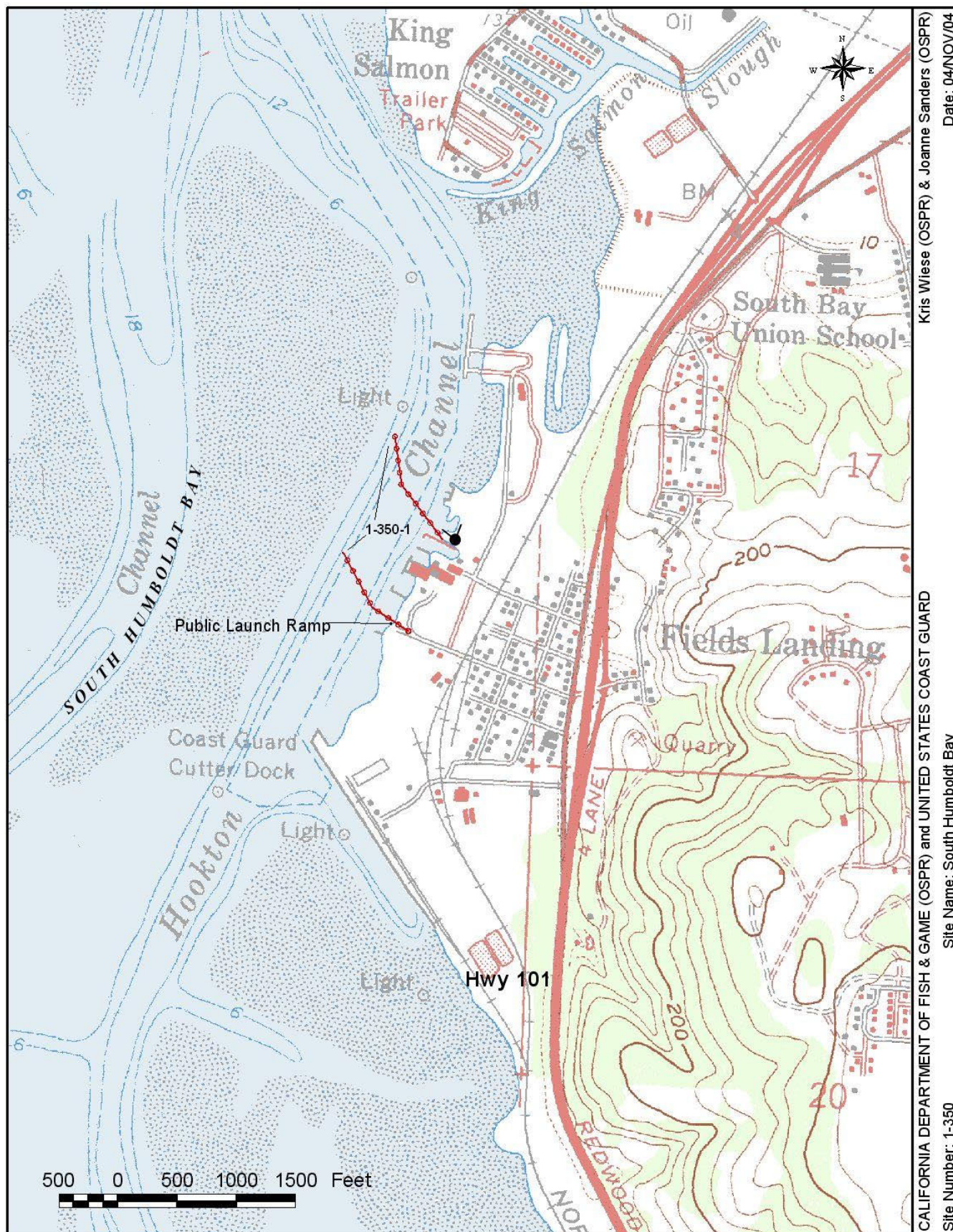
Launching, Loading, Docking

and Services Available:

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



CALIFORNIA DEPARTMENT OF FISH & GAME (OSPR) and UNITED STATES COAST GUARD

Kris Wiese (OSPR) & Joanne Sanders (OSPR)

Date: 04/NOV/04

Site Name: South Humboldt Bay

Site Number: 1-350

○-○-○ Harbor / Curtain Boom

×-×-× Swamp / River Boom

— all other boom types

▤ Sorbent boom

▨ Berm, Dam, or Dike

++++ Filter fence

◀-○-○ Boom tow

⚓ SSS - Shoreside Skimming System

⚓ SFS - Stationary Floating Skimmer

⚓ SPS - Self Propelled Skimmer

⚓ TSA - Towed Skimming Array

County: **Humboldt**

USGS Quad:

Thomas Guide Location

CA Road Atlas

NOAA Chart:

Latitude N

Longitude W

Last Page Update :

SITE DESCRIPTION:**SEASONAL and SPECIAL RESOURCE CONCERN****RESOURCES OF PRIMARY CONCERN**

Extensive marsh and salmonid habitat lie upstream of this area.

Wading birds, shorebirds, waterfowl (01-12), migratory waterfowl and shorebirds (10-04); Black brant (10-06), Kingfishers, Egrets, raptors incl. Osprey (CSC)(01-12).

Anadromous salmonids: Coho (FT) and Chinook (CSC) salmon, Steelhead (FSS) and Coastal cutthroat (CSC) trouts:

- spawning runs (08-06)
- juveniles/smolts (02-08)

Pacific herring spawn on eelgrass (11-03).

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES**KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)**

Type	Name / Title	Organization	Phone
E		City of Eureka	(707) 441-4206
O	Suzie Howser Dock Master	Humboldt Bay Harbor, Recreation, and Conserv.	(707) 443-0801
T	Eric Nelson Reserve Manager	Humboldt Bay NWR Complex	(707) 733-5406
O	Troy Nicolini	National Weather Service Woodley Island	(707) 443-0574
C	Helene Rouvier	Table Bluff Reservation Wiyot Tribe	(707) 733-5055

ADDITIONAL SITE SUMMARY COMMENTS:

1-352 -A Site Strategy - White Slough & Salmon Creek

County and Thomas Guide Location

NOAA CHART

1-352 -A

Latitude N

Longitude W

CA Road Atlas Humboldt

CONCERNS and ADVICE to RESPONDERS:

Last Page Update :

HAZARDS and RESTRICTIONS:

The soft mud can be challenging to boom deployment workers.

SITE STRATEGIES

Strategy 1-352.1 Objective: Prevent oil from entering the slough

Use 600' of hard boom, deliverable to site by USCG helicopter. Hand crews can deploy the boom at lower tides.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	type and gear	Boom boat	Skiffs punts	Skimmers No	Type	Special Equipment or comment No and kinds	staff deploy	Staff tend
1-352.1	600	0	0	0	0		0	0	0		4 Anchor stakes	6	

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

This site can be reached by driving south from Eureka on Highway 101. Take the Hookton Road exit from Highway 101 at the south end of the Bay. To the Hookton Slough trailhead, drive 1.2 miles west on Hookton Road; the parking area is on the north side of Hookton Road.

LAND ACCESS:

WATER LOGISTICS:

Limitations: depth, obstruction

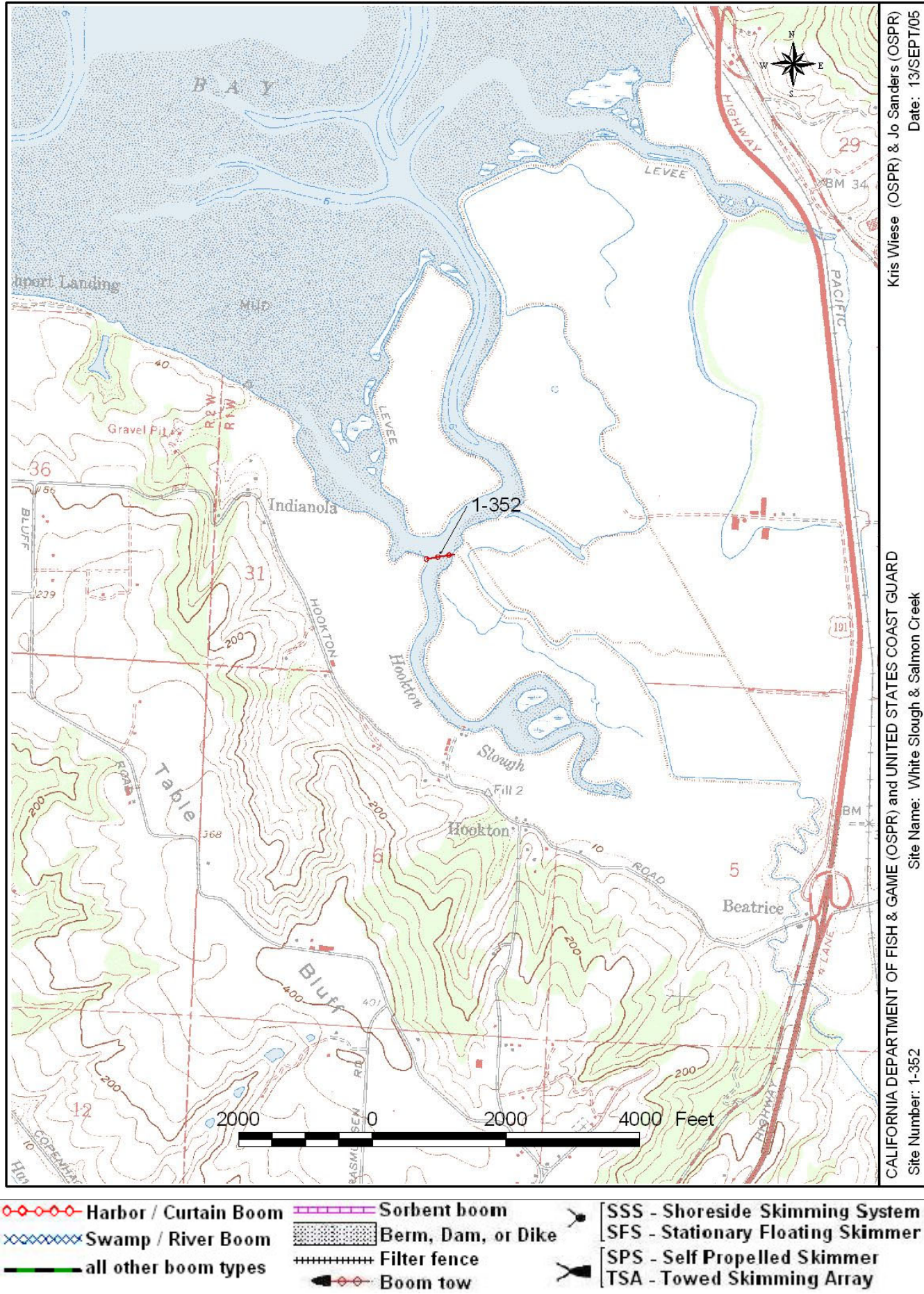
Launching, Loading, Docking

and Services Available:

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



Kris Wiese (OSPR) & Jo Sanders (OSPR)
Date: 13/SEPT/05
CALIFORNIA DEPARTMENT OF FISH & GAME (OSPR) and UNITED STATES COAST GUARD
Site Name: White Slough & Salmon Creek
Site Number: 1-352

1-360 -A Site Summary- South Spit

1-360 -A

County: **Humboldt**
USGS Quad: **Humboldt Fields Landing**

Thomas Guide Location
CA Road Atlas
NOAA Chart: **18622**

Latitude N Longitude W
40 43' 45" 124 15'W

Last Page Update : 7/1/1996

SITE DESCRIPTION:

Fine to medium grain sand beach on the ocean side, backed by vegetated dunes. Mudflats on bay side.

SEASONAL and SPECIAL RESOURCE CONCERN

RESOURCES OF PRIMARY CONCERN

California brown pelican (SE)(04-11), Snowy plover (FT)(01-12) - Critical nesting period (04-07). Nests directly on sand within dunes.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
T		US Fish and Wildlife Service	(707) 822-7201
O	Troy Nicolini	National Weather Service Woodley Island	(707) 443-0574
T	Linda Raush	Bureau of Land Management	(707) 822-7648
C	Helene Rouvier	Table Bluff Reservation Wiyot Tribe	(707) 733-5055

ADDITIONAL SITE SUMMARY COMMENTS:

1-360 -A Site Strategy - South Spit

County and Thomas Guide Location

CA Road Atlas Humboldt

NOAA CHART

18622

1-360 -A

Latitude N Longitude W

40 43' 45 124 15'W

CONCERNS and ADVICE to RESPONDERS:

Last Page Update :

HAZARDS and RESTRICTIONS:

SITE STRATEGIES

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no type and gear	Boom boat	Skiffs punts	Skimmers No Type	Special Equipment or comment No and kinds	staff deploy	Staff tend
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LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

Go south on U.S. hwy 101 to Hookton Road overpass M.P. 68.116. From stop sign, continue west (straight ahead) on Hookton Road to Table Bluff Road. Continue in same direction. The road will become South Jetty Road and run the length of the South Jetty terminating at the entrance channel. The gate key can be obtained by contacting the BLM ranger at the Old Lighthouse Ranch.

LAND ACCESS: Call Humboldt Cty Sheriff for key to gate

WATER LOGISTICS:

Limitations: depth, obstruction

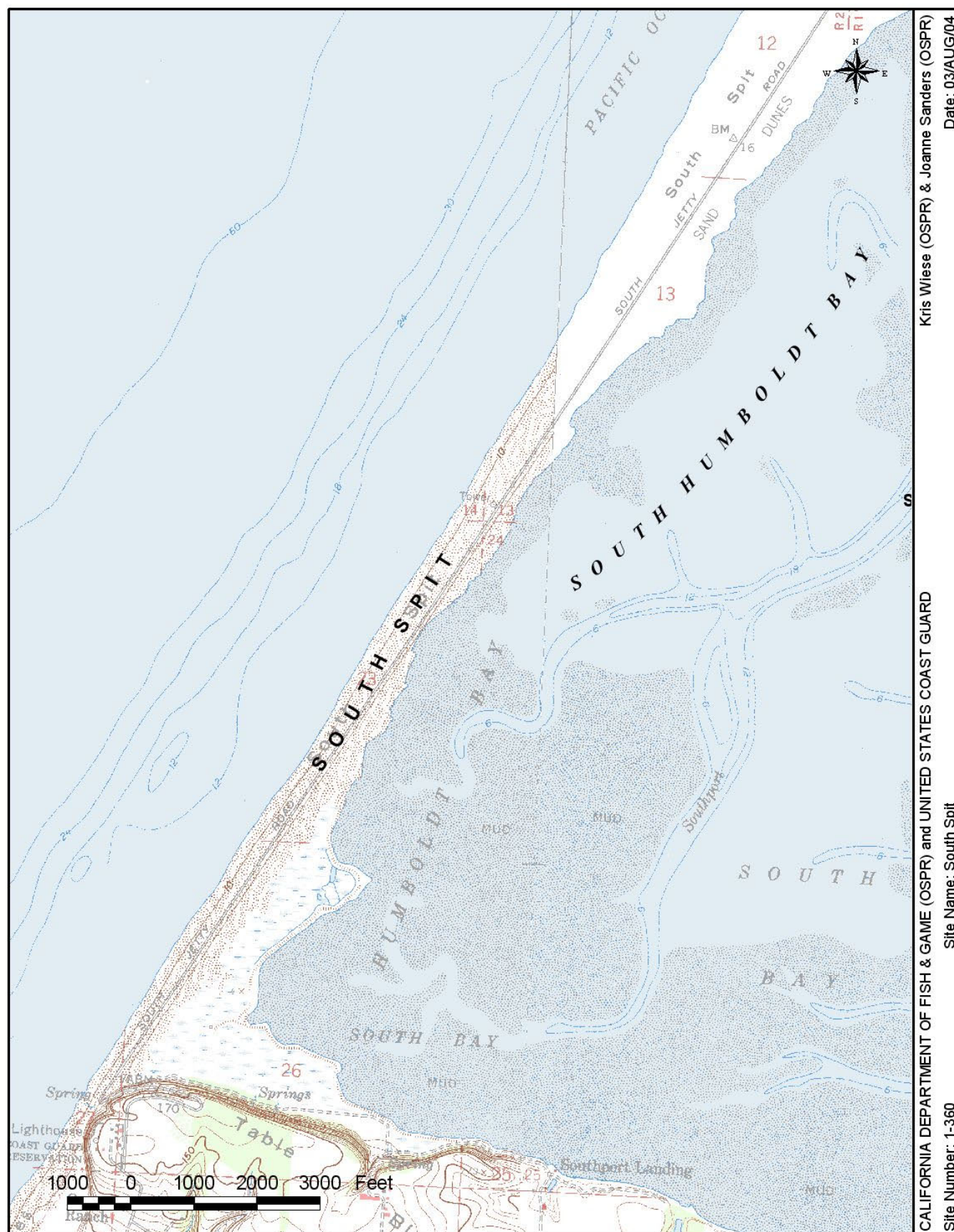
Launching, Loading, Docking

and Services Available:

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:



CALIFORNIA DEPARTMENT OF FISH & GAME (OSPR) and UNITED STATES COAST GUARD

Kris Wiese (OSPR) & Joanne Sanders (OSPR)

Site Name: South Spit

Site Number: 1-360

Date: 03/AUG/04

Harbor / Curtain Boom

Swamp / River Boom

all other boom types

Sorbent boom

Berm, Dam, or Dike

Filter fence

Boom tow

SSS - Shoreside Skimming System

SFS - Stationary Floating Skimmer

SPS - Self Propelled Skimmer

TSA - Towed Skimming Array